

CDBG-DR UNMET NEEDS ASSESSMENT

Boulder County

Disaster Relief Appropriations Act, 2013 (Pub. L. 113-2)

For the September 13, 2013 Flood Disaster

April 13, 2015

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[To be completed with final document]

DRAFT

Executive Summary

Boulder County, Colorado, experienced a catastrophic flood event from September 11th, 2013 through September 15th, 2013. Beginning September 9th, more than 17 inches of rain fell along the Colorado Front Range. This was an historic event and the rainfall triggered flash floods across Boulder County and the surrounding region. The volume of water in the St. Vrain Creek was ten times its normal amount by the evening of September 11th, 2013. [Add other creek flood amounts]

This disaster was unlike past disasters in Boulder County according to the Boulder County *Flood Recovery Resource Guide, Spring 2013*. Rivers and creeks selected new paths as water rushed down the mountains. The Guide states that properties were washed away or covered in tons of debris, access for many homes was destroyed, and debris continues to clog many of the waterways. The impacts from the flood have left Boulder County much more vulnerable to future flood events as drainages and watersheds that have historically absorbed and slowed down runoff during the spring thaws and heavy rains are now depleted and unable to serve this function.

The Department of Housing and Urban Development (HUD) has issued three allocations of Community Development Block Grant – Disaster Recovery (CDBG-DR) funding for the State of Colorado. The CDBG-DR funds are provided for the “purpose of assisting recovery in the most distressed areas in Colorado”. The first allocation of \$62,800,000 was published in the December 16, 2013 Federal Register (78 FR 76154) and the second allocation of \$199,300,000 was published in the June 3, 2014 Federal Register (79 FR 31964). The third allocation \$58,246,000 was published in the January 8, 2015 Federal Register (80 FR 1039). HUD’s total CDBG-DR allocations to Colorado come to \$320,346,000. Per the Federal Register Notices, the State of Colorado must expend at least 80 percent of these funds (\$256,276,800) in the most impacted counties of Boulder, Weld, and Larimer with the remaining funds to be spent in other counties having a declared major disaster in 2011, 2012, or 2013.

HUD requires recipients of CDBG-DR funds to assess both direct and indirect impacts from disasters and conduct an “unmet needs” assessment for the three major categories of Housing, Infrastructure, and Economic Revitalization. Boulder County has hired an independent disaster recovery consulting firm to conduct a comprehensive unmet needs assessment approximately one year after the 2013 flood to assess remaining unmet needs. This document details the methodology, sources of data, analysis of impacts, and sources of assistance that were factored into determining that an estimated **\$927,972,398** of unmet disaster related need continues to exist in Boulder County.

HOUSING NEEDS

The flooding in September 2013 caused tremendous damage to homes and property in Boulder County. Many residents forced from their homes during the initial flood still find themselves displaced. After the flood waters receded, homes were evaluated and residents were faced with the need to repair and rehabilitate their dwellings, find ways to access their properties, and in some cases make the difficult decision that homes could not be repaired or rebuilt.

More than 11,800 properties sustained flood damages throughout the County and another 200 properties had damage to their private roads, bridges, or culverts. Based on the FEMA data, 3712 impacted families are LMI households.

Finding short-term or long-term housing solutions is a challenge for Boulder County and its communities. Affordable housing for low and very low income families is a huge need for these communities. Communities throughout Boulder County reported needs estimated at approximately \$194 million in unmet housing needs.

INFRASTRUCTURE NEEDS

Boulder County experienced massive infrastructure damage in September 2013 as a result of record rainfall in the foothills of the Rocky Mountains. For the purpose of this assessment, the term infrastructure is intended to include traditional infrastructure, watershed, and agricultural projects. As the water worked its way down the mountains, the volume and velocity of water rushing through the St. Vrain Creek, Boulder Creek, South Boulder Creek, Little Thompson River, Four Mile Creek, Four Mile Canyon Creek, Gold Run, and Left Hand Creek channels increased immensely. The extreme volume and speed caused substantial damage to the river and creek channels, as floodwaters rechanneled and breached the bank in multiple locations. Timber, vegetation, material from damaged structures, and debris were deposited in and alongside the river, creating additional immediate hazards to life and safety during the flood and causing an increase in future flood risk by reducing the channel capacity.

The flood also impacted electrical services throughout Boulder County. Customer's experienced sustained outages that began during the early moments of the flood and lasted approximately four days until the electrical companies could gain access and make repairs. Floodwaters did reach various wastewater treatment plants in cities in Boulder County causing service interruptions for two or more days and requiring resiliency and recovery projects to protect the sites from future damages.

Funding from the Federal Emergency Management Agency (FEMA) Public Assistance (PA) program and the Federal Highway Administration (FHWA) program help communities recover from disasters by providing federal reimbursement for eligible, disaster-related costs for debris removal, emergency measures, and permanent work to repair and replace disaster-damaged roads and public facilities. The cities within Boulder County have worked with FEMA and FHWA to develop scopes of work to repair damages caused by the September 2013 flood. The Presidential decision for this disaster was a federal 75% cost share. The State of Colorado has agreed to provide one-half or more of the non-FEMA cost share for FEMA funded projects. This leaves the local communities responsible for the remaining total of FEMA project cost. FHWA will also cover 75% of costs and the local community is responsible for the remaining 25% local share. After factoring in almost \$250 million in other resources, the County's unmet need remains at over \$507 million dollars.

SPECIAL DISTRICTS AND THE WATER CONSERVANCY DISTRICT

An Unmet Needs Survey was conducted among the Special Districts and the Water Conservancy District within Boulder County in October, 2014. Subsequent to the survey responses received in October and November, 2014, the Boulder County Collaborative has received updated information concerning the FEMA match required on behalf of the districts and has been included in the updates to this document.

Special Districts and Water Conservancy Districts in Colorado are legal government entities, i.e., political subdivisions of the state, which make up a third level of government in the United States. (The federal and state governments are the other two levels.) Local government entities include counties, municipalities (cities and towns), school districts, and other types of government entities such as "authorities" and "special districts." Colorado law limits the types of services that county governments can provide to residents. Districts are created to fill the gaps that may exist in the services counties provide and the services the residents may desire. The majority of districts draw their boundaries in unincorporated county land, but residents of a municipality may be included in one or more districts. Please note that Special Districts and Water Conservancy Districts are different distinct legal entities under Colorado state law. However, for the purposes of identifying unmet needs of governmental entities that are not part of a city, town, or county government that is participating in the Boulder County Collaborative, these entities will be referred to collectively as Special Districts.

The current unmet need is almost \$900,000 and comprises the funds needed to cover the local share of the FEMA Public Assistance work obligated to these entities. The Left Hand Creek and St. Vrain Creek Water Conservancy District has entered into an inter-local agreement with Boulder County to jointly share local match requirements for recovery work for Lake 4. This represents an additional need for the Water Conservancy District of over \$600,000.

CREEKS/WATERSHEDS

Boulder County created a Comprehensive Creek Plan Initiative (CCP) to address watershed recovery. The CCP was initiated to ensure county-wide view of creek recovery and restoration. The CCP began with community meetings to identify needs resulting from the flood. First steps started with high-hazard debris removal and mitigation projects. The CCP then prepared for and transitioned to watershed-level master planning process. Collaboration was formed among the Coalition Partners¹, community members, landowners, and stakeholder interests.

Unmet need has been based on an overview of the watershed master plans: St. Vrain Creek, Boulder Creek, South Boulder Creek, Left Hand Creek, Four Mile Creek, and Little Thompson River. The Planning Areas of each Master Plan are divided into a number of reaches along the length of the watersheds to facilitate planning and discussion. These plans contain numerous repair and resiliency measures and alternatives. River restoration projects which might be considered in terms of providing improved repair and resiliency include the relocation of structures from the floodplain, single span bridge replacements of existing culverts, expanding the riparian corridor with native vegetation, revised floodplain regulations, and increased set-backs, among a variety of other actions.

Due to the extensive nature of the damages to the Boulder County creeks and watersheds including the costs associated with staffing these activities, an unmet need of more than \$191 million still remains. The State of Colorado has allocated \$25 million of its Round 2 CDBG-DR funds for the Watershed

¹ Partners include: Boulder County, City of Longmont, City of Boulder, Town of Lyons, Town of Jamestown, St. Vrain and Left Hand Water Conservancy District, Longmont and Boulder Valley Conservation Districts, Left Hand Water District, Arapaho and Roosevelt National Forests and Pawnee National Grassland, Keep It Clean Partnership, Natural Resources Conservation Service, Colorado Water Conservation Board, Colorado Department of Transportation, Colorado Division of Homeland Security and Emergency Management, Colorado Division of Reclamation Mining & Safety, FEMA, and the Environmental Protection Agency

Resilience Pilot Program. However, these funds are inadequate to meet the need and are available state-wide on a competitive basis with no guarantee that unmet needs listed in this document will receive funds from this program.

BUSINESS AND ECONOMIC NEEDS

The September 2013 flood caused wide-spread disruption to the operations of local businesses throughout Boulder County with physical damage to buildings, inventory and equipment loss, and revenue loss both during and after the flood. The effect of the flood was not contained solely to businesses within the flood zone, as road closures, power outages, and flood-related duties prevented employees and customers alike from reaching businesses.

The three most impacted business communities were in the city of Boulder, the city of Longmont and the town of Lyons. Of the 349 business that applied for federal small business loans, 315 (90%) were from these three communities. Out of the 83 small agriculture applicants, 76 (92%) were from these three communities, with over half (42) from Lyons alone. The city of Boulder's non-profits made up 75% (38) of applicants in the non-profit category. Unmet Need was estimated based on the number of businesses, small agriculture, and non-profits who applied for loans but were not funded. There were a total of 265 unfunded applications with an estimated over \$12 million in unmet need.

PLANNING AND CAPACITY NEEDS

Due to the extensive damages to the county's housing, infrastructure, and businesses, comprehensive needs assessments and planning studies are needed to ensure that the CDBG-DR funds are distributed in accordance with need and that best designs are implemented to provide for long-term recovery and increased resiliency to future disasters. The county has identified approximately \$8.5 million in unmet need for planning and increased operational capacity.

LOST REVENUE

All properties within the State of Colorado require standards of construction. In the Boulder County, Boulder, and Longmont area, construction standards are higher than some other parts of the State due to wind and snow load requirements to keep a building structurally safe. The State relies on local government to enforce these regulations. Fees for these services, along with permitting add necessary revenue to help cover staffing and overhead costs.

Waived fees, lost rent, and relocation costs meant reduced general fund revenue resulting in an unmet need of approximately \$ 4 million.

OTHER COMMUNITY NEEDS

The final category of unmet needs relates to the projects that several Boulder County communities need to recover beyond just damage repairs and resiliency but also be made strong community once again. These additional needs total more than \$9 million.

CLIMATE CHANGE AND RESILIENCY

Each grantee must describe the science-based risk analysis it has or will employ to select, prioritize, implement, and maintain infrastructure projects or activities. At a minimum, the grantee's analysis must

consider a broad range of information and best available data, including forward-looking analyses of risks to infrastructure sectors from climate change and other hazards.

The State of Colorado has been very proactive in undertaking comprehensive risk analysis with an emphasis on regional and statewide approaches. The recent report, *Climate Change In Colorado*, is a synthesis of climate science relevant for management and planning for Colorado's water resources. The data was gathered through focuses on observed climate trends, climate modeling, and projections of temperature, precipitation, snowpack, and streamflow.

Grantees are required to identify and implement resilience performance standards. To meet these HUD requirements, costs for projects may increase substantially. According to HUD, the "resiliency" amount is "calculated at 30 percent of the total basic cost to rebuild back the most distressed homes, businesses, and infrastructure to pre-disaster conditions."²

Table 1: Summary of County-Wide Estimated Flood Recovery Unmet Need and Percentages

Activity	Unmet Needs County-Wide	Percent
Housing Unmet Need (including Buyout/Acquisition)	\$194,552,388	20.95%
Lost Revenue	\$4,064,718	0.44%
Business Unmet Need	\$12,794,124	1.38%
Special Districts	\$895,701	0.10%
Creeks/Watersheds	\$191,627,250	20.63%
Total Infrastructure (PA/HMGP and Resiliency)	\$507,143,792	54.60%
Additional Community Needs	\$9,190,005	0.99%
Planning and Capacity Needs	\$8,501,689	0.92%
Total	\$928,769,667	100.00%

² *Second Allocation, Waivers, and Alternative Requirements for Grantees Receiving Community Development Block Grant (CDBG) Disaster Recovery Funds in Response to Disasters Occurring in 2013*, June 3, 2014, Federal Register, Vol. 79, No. 106

Acknowledgements

Boulder County governments in collaboration with numerous local, state, and federal partners have worked tirelessly to make needed assistance available to residents and businesses after the September 2013 flood. These partners have been and will continue to be vital during the recovery process. Boulder County would like to acknowledge the efforts of the numerous programs and organizations that have helped to gather information and verify data necessary to compile this county-wide unmet needs assessment.

GOVERNMENT

Federal Partners:

- » U.S. Department of Housing and Urban Development (HUD)
- » Environmental Protection Agency (EPA)
- » Federal Emergency Management Agency (FEMA)
- » Small Business Administration (SBA)
- » U.S. Army Corp of Engineers (USACE)
- » U.S. Fish and Wildlife Service (USFWS)
- » U.S. Department of Agriculture (USDA)
- » Natural Resource Conservation Services (NRCS)
- » Federal Highway Administration (FHWA)
- » Boulder County's Congressional Delegation

State Partners:

- » Colorado Recovery Office
- » Colorado Department of Local Affairs (DOLA)
- » Colorado Division of Homeland Security and Emergency Management (DHSEM)
- » Colorado Department of Transportation
- » Colorado Division of Reclamation Mining & Safety
- » Colorado Parks and Wildlife
- » Colorado Water Conservation Board
- » Colorado Department of Natural Resources
- » State Historic Preservation Office
- » Boulder County's State Legislative Delegation

Local Partners:

- » Boulder County Government
- » Boulder County Special Districts

- » City of Boulder Government
- » Town of Jamestown Government
- » City of Louisville Government
- » City of Lafayette Government
- » St. Vrain Valley School District
- » City of Longmont Government
- » Boulder Valley School District

- » Boulder County Flood Recovery Permitting and Information Center (FRPIC)
- » Town of Lyons Government
- » Town of Nederland Government
- » Boulder County Housing Authority
- » Longmont Housing Authority
- » Boulder Housing Partners

Non-Government

Non-Profits:

- » Boulder County Long-Term Flood Recovery Group (LTFRG)
- » Metro Denver Homeless Initiative
- » Salvation Army
- » OUR Center
- » Housing Helpers
- » Foothills United Way
- » Boulder County Small Business Development Center (SBDC)
- » Longmont and Boulder County Community Foundations
- » Boulder County Parks and Open Space Foundation

Section 1 Flood Impact

Flooding Impact to Boulder County

Boulder County is located in the front range of the Rocky Mountains in north central Colorado and is one of the original 17 counties created by the Territory of Colorado on November 1, 1861, and even today retains essentially the same borders. The city of Boulder is the county seat and lies at the base of the Rocky Mountains at around 5,350 feet. The county has a total area of 740 square miles, of which, 726 square miles is land and 14 square miles is water (1.9%). As of the 2010 Census, the county had a population of 294,567 people.

Boulder County is comprised of the City of Boulder, the City of Longmont, the City of Lafayette, the City of Louisville, the Town of Lyons, the Town of Nederland, the Town of Erie, the Town of Superior, the Town of Ward, and the Town of Jamestown. The county also encompasses the census-designated places of Allenspark, Coal Creek, Eldorado Springs, Gold Hill, Gunbarrel, Niwot, and Valmont as well as the unincorporated communities of Caribou and Hygiene.

Beginning September 9, 2013, more than 17 inches of rain fell along the Colorado Front Range. This was an historic event and the rainfall caused flash floods across Boulder County and the surrounding region. From September 11th, 2013 through September 15th, 2013 Boulder County experienced a catastrophic flood event. Water exiting the foothills diverted into nearby rivers, including the St. Vrain, Left Hand Creek, Boulder Creek, South Boulder Creek, Little Thompson River, Four Mile Creek, Four Mile Canyon Creek, and Gold Run Creek causing the waterways to overflow their banks and flood areas along their boundaries, resulting in a massive amount of property and infrastructure damage in Boulder County.

The volume of water in the St. Vrain Creek was ten times its normal amount by the evening of September 11th, and access to the Town of Lyons was cut off by the surging waters and lost all utility services. The Town of Jamestown which had a pre-flood population of 300 and one of the few remaining “one-room” schools in Colorado, lost 20% of the homes in town, 50% of the roads, both bridges, and their water plant. Evacuation of more than 1,100 Lyons, Jamestown and other mountain community residents was undertaken by the National Guard; it was the second-largest aerial evacuation since Hurricane Katrina.

The city of Longmont was also severely impacted when the St. Vrain River overflowed causing significant damage to the city’s raw water storage and delivery system along with loss of bridges and other critical infrastructure. The city of Boulder experienced flooding in all major drainage ways, and lost water service to one of the city’s two water treatment plants, with the second running only on generator power. The primary wastewater interceptor for the city was left exposed and nearly failed when Boulder Creek jumped its banks. Fourteen percent of the city’s housing units were damaged, which represents one-third of all flood impacted housing units statewide.

Based on FEMA Verified Flood Loss (FVL) data, 11,860 housing units were impacted by the flood. Of the 11,860 damaged housing units, 445 were determined to have Major-to-Severe damage. To further

exacerbate the situation, Boulder County's Department of Transportation reported that approximately 200 or more housing structures had damages to bridges, culverts, and private roads limiting or completely cutting off access to the home. Aerial photography showed approximately 115 bridges and culverts with some level of damage and another 60 + culverts where the damage could not be assessed.

Impacts to Colorado's two biggest economic drivers, agriculture and tourism, were profound according to the State of Colorado's *Action Plan for Disaster Recovery*³. Colorado's agriculture is dependent on transported water. The agriculture industry lost irrigation ditches vital to the livelihood of farmers and ranchers. Outside of the impacts to the agriculture sector, businesses throughout Boulder County face the double hardship of damaged buildings and loss of inventory and equipment along with the loss of business revenue. Factors that compounded impacts included customers being unable to access the business, employees being unable to get to their jobs, and loss of tourist at the height of the season for Rocky Mountain National Park.

"This disaster was different than past disasters in Boulder County," according to the Boulder County *Flood Recovery Resource Guide*⁴. Rivers and creeks selected new paths as water rushed down the canyons. Bridges, roads, public and private properties were washed away, covered in tons of debris, access for many homes was destroyed, and debris continues to clog many of the waterways. According to the State of Colorado's *Action Plan for Disaster Recovery*⁵ many of the damaged structures were not in the floodplain but as the rivers cut new courses outside of their original banks, these structures became inundated with flood waters.

Boulder County has formed a collaborative partnership among its impacted communities with a focus on long-term recovery, comprised of each municipality in the county as well as county government. Local governments in the county also participate in the Long-Term Flood Recovery Group (LTFRG) with a mission to fulfill the unmet needs of residents who faced losses in the destructive 2013 Flood. Boulder County established the Flood Rebuilding and Permit Information Center (FRPIC) staffed by experts in floodplain regulations, transportation, on-site wastewater (septic) systems, planning and building codes to ensure residents have access to the support they need while rebuilding after the flood.

Scope and Purpose

On December 16, 2013, the U.S. Department of Housing and Urban Development (HUD) issued notice of its first round of Community Development Block Grant-Disaster Recovery (CDBG-DR) funding in the amount of \$62,800,000 to address Colorado's most immediate critical needs for housing, infrastructure and economic revitalization. On June 3, 2014, HUD issued its second allocation of CDBG-DR funds to the State of Colorado in the amount of \$199,300,000. This allocation provides broader funds for infrastructure recovery, including mitigation and resilience as part of the recovery effort and directs recipients to undertake comprehensive planning to promote resilience as part of the effort. On January 8, 2015, HUD announced a third allocation of \$58,246,000, bringing the State's total allocated CDBG-DR funds to \$320,346,000. HUD is requiring that the State of Colorado expend at least 80 percent of its

³ Colorado Action Plan for Disaster Recovery, Version 1.3, July 21, 2014

⁴ Boulder County Flood Recovery Resource Guide, Spring 2014

⁵ Colorado Action Plan for Disaster Recovery, Version 1.3, July 21, 2014

funds in the most impacted counties of Boulder, Weld, and Larimer, with the remaining funds going to other counties having a declared major disaster in 2011, 2012, or 2013. Additionally, HUD requires that at least 50% of the CDBG-DR funds be expended to benefit low-to-moderate income individuals through either individual assistance (such as housing repairs) or on an area-wide basis (such as infrastructure).

Table 2: Breakdown of HUD Recovery Fund Allocations

Allocation	Location	Total Amount	Amount Dedicated to Most Impacted Areas	Amount in Most Impacted Areas Dedicated to LMI Households
Round 1 CDBG-DR Federal Register /78 FR 76154 / Monday, December 16, 2013	State of Colorado	\$62,800,000	\$50,240,000	\$25,120,000
Round 2 CDBG-DR Federal Register /79 FR 31964 / Tuesday, June 3, 2014	State of Colorado	\$199,300,000	\$159,440,000	\$79,720,000
Round 3 CDBG-DR Federal Register/80 FR 1039/Thursday, January 8, 2015	State of Colorado	\$58,246,000	\$49,596,800	\$23,298,400
Total		\$320,346,00	\$256,276,800	\$128,138,400

Data Collection

HUD states in its Federal Register notices allocating the CDBG-DR funds that, “ Impacts must be described by type at the lowest geographic level practicable (e.g., city/county level or lower if available)...In addition, a needs assessment must take into account the costs of incorporating mitigation and resiliency measures to protect against future hazards. [78 FR 14333, March 5, 2013]

Developing an accurate and all-encompassing representation of flood damage and remaining needs in Boulder County required detailed identification and documentation. Recording the costs associated with damages is an important step in understanding where the county is in the recovery process and the amount of additional funding needed to continue that process. For this assessment of unmet disaster need, the impact of the September 2013 flood was determined through data collection from the various cities and towns within Boulder County and a survey of Boulder County special districts. Much of the data was provided by local governments responsible for flood recovery.

Additional data was provided by the FEMA, SBA, and the State of Colorado’s Action Plan and Substantial Amendment approved November 3, 2014.

HOUSING

The State of Colorado provided FEMA and SBA funding data current as of October, 2014. The data was sorted by zip code and then summarized by each city or town. This data was compare to direct data provided by the individual communities.

INFRASTRUCTURE

Boulder County and the individual cities and towns provided information on critical infrastructure needs identified throughout Boulder County and included projects not captured in current FEMA Public Assistance (PA) data. The FEMA PA data is based on current available data which is still subject to change as the Project Worksheets (PWs) continued to be obligated and re-versioned during the implementation process.

SPECIAL DISTRICTS

A survey was conducted with the special districts throughout Boulder County that registered flood damage with FEMA. These districts include Boulder Valley School District and St. Vrain School District; Four Mile Canyon, Allenspark, and Lyon's Fire Districts; and Pine Brook Water District, Left Hand Water District, and St. Vrain and Left Hand Water Conservancy District.

CREEKS/WATERSHEDS

Boulder County created a Comprehensive Creek Plan (CCP) Initiative which initiated major creek planning studies for Four Mile Creek, Little Thompson River, St. Vrain Creek, Boulder Creek, South Boulder Creek, and Left Hand Creek. Data for the creeks and watershed needs is based on both final and preliminary determinations from these studies.

BUSINESS AND ECONOMY

SBA data was used to determine needs associated with businesses, small agriculture, and non-profits. The SBA data was provided through the State of Colorado based on type of business activity and zip code. The data was then summarized by each city or town.

PLANNING AND COMMUNITY NEEDS

Boulder County worked with regional and local planning, public, and community service organizations to understand needs in the community. Data was provided by organizations, local governments, and Boulder County governmental departments.

Section 2 Housing

Determining Unmet Needs

COUNTY-WIDE HOUSING DEMOGRAPHICS

As of the 2013 estimate by the U.S. Census Bureau, Boulder County had a population of 310,048 with a total of 129,247 housing units. According to the 2010 Census information, owner-occupied single family homes comprised approximately 63.3% of the residents in Boulder County and rental homes comprised 36.7%. Multi-family housing complexes make up approximately 29.1% of units. There was heavy impact on traditionally underserved populations, including non-English speaking families, families making less than 80% of the area medium income (AMI), and the homeless community. Households below 80% of the AMI for Boulder County total 36.5%⁶.

Table 3: Boulder County Housing Units by Local Government and Percent of Vulnerable Populations⁷

Community	# Housing Units	Median HH Income	% Poverty	% Over 65	% Owner	% Renter	% Multi-Units
Boulder Co	129,247	\$67,403	14.2	11.7	63.3	36.7	29.1
Allenspark	267*	#	#	11.2	77.9	22.1	#
Boulder	43,479	\$56,206	21.6	8.9	48.7	51.3	46.5
Eldorado Springs	271	#	#	12.5	70.1	29.9	#
Erie	6,080	\$107,246	3.7	5.7	84.5	15.5	5.7
Jamestown	141	#	#	18	77.9	22.1	#
Lafayette	9,997	\$69,759	8.8	8.1	73.2	26.8	15.4
Longmont	35,008	\$57,142	13.7	11.2	62	38	28.7
Louisville	7,892	\$84,988	5.6	9.9	72.3	27.7	20.1
Lyons	960	#	#	0.4	72.1	27.9	6.0
Nederland	657	#	#	5.9	60.6	39.4	#
Niwot	1,582	#	#	5.4	83.5	16.5	#
Superior	4,698	\$107,921	4.2	3.1	72.3	27.7	24.0
Ward	75	#	#	6	76	24	#

#-No census data available at this level

*Census reports a total of 892 Housing units, however, 577 are seasonal

According to the State of Colorado's Action Plan, the majority of destroyed housing units disproportionately impacted Low-to-Moderate Income (LMI) households. A household is deemed LMI

⁶ State of Colorado Action Plan Amendment #1, *Substantial Amendment for the Second Allocation of CDBG-Disaster Recovery*, 11/3/2014

⁷ U.S. Census Bureau, State and County QuickFacts, 2013 estimates, www.quickfacts.census.gov

when the combined income of all adults is at or below 80% AMI. The Action Plan reports the following percentages for LMI households with destroyed homes.

Table 4: AMI of Destroyed Units in Boulder County

Boulder County	< 30% AMI	31%-50%	51%-80%	>80% AMI	Unreported	# Destroyed
Percent	27.5%	19.6%	13.7%	29.4%	9.8%	77
Income Limit (4 persons)	\$21,200	\$35,350	\$50,050	Over \$50,050	N/A	N/A

DISPLACED PERSONS IN FEMA TEMPORARY HOUSING UNITS

FEMA provides a Direct Housing Assistance Program for persons displaced by disasters. The program duration is for up to 18 months from the date of the disaster declaration and then occupants are expected to have a permanent housing plan. The 18-month end date for Boulder County is March 15, 2015. FEMA placed 17 temporary housing units (THUs) at the Boulder Meadows Mobile Home Park located in the City of Boulder. On December 1, 2014, FEMA reported the following update:

- 17 units - The total number of THUs in Boulder County for the 2013 flood
- 16 units— Occupied by 15 families after the flood
- 100% - Total occupants qualified as LMI

As of February 2015, FEMA reports that the primary reason the remaining families have not found permanent housing solutions is there are no affordable resources available in Boulder County. According to FEMA, affordable housing units have waiting lists ranging from one-to-two years and other available units have rental prices that exceed what the LMI occupants can afford.

FEMA reports that there is currently no extension in place for the remaining families past the March 15th date. At that time, any remaining occupants will need to coordinate housing assistance with local or state agencies.

Federal Assistance to Individuals

STATE OF COLORADO ROUND 1 CDBG-DR ALLOCATION

The State of Colorado received its first allocation of \$62,800,000 of CDBG-DR funds on December 16, 2013⁸. Per the Federal Register requirements, 80% of the funds (\$50,240,000) were to be allocated to the three most impacted communities of Boulder, Weld, and Larimer Counties. Of the original \$62,800,000, the State allocated \$23,267,400 (39%) for housing assistance. Boulder County received \$11,137,519 (47.9%) of the total housing allocation. The distribution of these funds by the State is in Table 5 below.

⁸ *Allocations, Waivers, and Alternative Requirements for Grantees Receiving Community Development Block Grant Disaster Recovery Funds in Response to Disasters Occurring in 2013*, December 16, 2013, 78 FR 76154

Table 5: CDBG-DR Funding for Housing Activities in Boulder County

Applicant	Program or Project Name	Round 1 Award
Boulder County	Housing Repairs	\$2,000,000
City of Longmont	Housing Repairs	\$2,000,000
City of Longmont	Housing Purchase	\$ 250,000
Boulder County	Temporary Rental Assistance	\$ 500,000
City of Longmont	Temporary Rental Assistance	\$ 500,000
Boulder County	Clearance and Demolition	\$ 250,000
Boulder County	Home Access	\$1,000,000
Boulder County	Buyouts	\$2,000,000
Lyons	Buyouts	1,000,000
Boulder County Housing Authority	New Construction – Aspinwall Apartments	\$ 737,519
Longmont Housing Authority	New Construction – Spring Creek Apartments	\$3,900,000
	Total	\$14,137,519

FEDERAL EMERGENCY MANAGEMENT AGENCY

The Federal Emergency Management Agency (FEMA) has a mission to support the nation and work with communities to “build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards”. Immediately following a disaster, FEMA provides support to the impacted communities by assisting with estimates of damage to housing and public infrastructure.

Analysis of the FEMA housing data provided by the State of Colorado in October, 2014, for each community in Boulder County is below in Table 6.

Table 6: FEMA Total Amounts of Assistance by Community

Community	# Units Damaged	Dollar Amount	# Units Destroyed	Dollar Amount	Total Dollar Amount
Allenspark	22	\$35,761	0	\$0	\$35,761
Boulder	6462	\$15,955,273	5	\$872,581	\$16,827,854
Eldorado Springs	16	\$53,628	0	\$0	\$53,628
Erie	28	\$33,522	0	\$0	\$33,522
Hygiene	1	\$31,292	0	\$0	\$31,292
Jamestown	74	\$503,338	5	\$864,676	\$1,368,014
Lafayette	83	\$184,785	0	\$0	\$184,785
Longmont	1013	\$5,418,038	3	\$77,618	\$5,495,655
Louisville	79	\$88,707	0	\$0	\$88,707
Lyons	368	\$2,915,984	26	\$2,930,071	\$5,846,055
Nederland	46	\$75,517	0	\$0	\$75,517
Niwot	69	\$95,858	0	\$0	\$95,858

Community	# Units Damaged	Dollar Amount	# Units Destroyed	Dollar Amount	Total Dollar Amount
Pinecliffe	1	\$887	0	\$0	\$887
Raymond	1	\$317	0	\$0	\$317
Superior	58	\$88,083	0	\$0	\$88,083
Ward	37	\$62,139	0	\$0	\$62,139
Unincorporated Boulder Co.	3,502	\$12,969,514	23	\$1,594,148	\$14,563,662
Total FVL	11,860	\$ 38,512,643	62	\$6,339,094	\$ 44,851,736

Each of the owner-occupied units inspected by FEMA is classified by HUD into one of five categories. The totals by category for Boulder County are listed below followed by Table #7 which break these totals down my local jurisdiction.

- » **Minor-Low:** Less than \$3,000 of FEMA inspected damage – This category is comprised of 8621 parcels for total estimated damages of \$13,621,532.
- » **Minor-High:** \$3,000 to \$7,999 of FEMA inspected damage – This category is comprised of 1972 parcels for total estimated damages of \$10,675,946.
- » **Major-Low:** \$8,000 to \$14,999 of FEMA inspected damage – This category is comprised of 370 parcels for total estimated damages of \$4,521,021.
- » **Major-High:** \$15,000 to \$28,800 of FEMA inspected damage – This category is comprised of 343 parcels for total estimated damages of \$7,971,418.
- » **Severe:** Greater than \$28,800 of FEMA inspected damage or determined destroyed – This category is comprised of 102 parcels for total estimated damages of \$8,061,819.

Table 7: FEMA Damage Categories by Community

Community	Severe	Major-High	Major-Low	Minor-High	Minor-Low	Total \$ and Units
Allenspark				\$10,702 2 units	\$25,059 20 units	\$35,761 22 units
Boulder	\$1,594,148 23 units	\$1,310,747 60 units	\$2,245,468 189 units	\$5,178,718 981 units	\$6,498,772 5209 units	\$16,827,854 6462 units
Eldorado Springs		\$17,846 1 unit	\$8,706 1 unit	\$12,734 3 units	\$14,343 11 units	\$53,628 16 units
Erie				\$9,274 2 units	\$24,249 26 units	\$33,522 28 units
Hygiene		\$31,292 1 unit				\$31,292 1 unit
Jamestown	\$937,912 7 units	\$168,732 7 units	\$47,374 4 units	\$85,721 11 units	\$128,275 45 units	\$1,368,014 74 units

Community	Severe	Major-High	Major-Low	Minor-High	Minor-Low	Total \$ and Units
Lafayette		\$38,683 2 units	\$50,190 5 units	\$42,107 8 units	\$53,805 68 units	\$184,785 83 units
Longmont	\$568,602 14 units	\$1,129,697 52 units	\$1,656,423 134 units	\$1,505,800 264 units	\$635,133 549 Units	\$5,495,655 1013 units
Louisville		\$17,091 1 unit		\$8,803 1 unit	\$62,813 77 units	\$88,707 79 units
Lyons	\$3,367,009 35 units	\$1,057,228 44 units	\$465,987 33 units	\$340,756 40 units	\$615,075 216 units	\$5,846,055 368 units
Nederland				\$28,541 5 units	\$46,977 41 units	\$75,517 46 units
Niwot				\$37,423 7 units	\$58,435 62 units	\$95,858 69 units
Pinecliffe					\$887 1 unit	\$887 1 unit
Raymond					\$317 1 unit	\$317 1 unit
Superior		\$19,246 1 unit	\$22,640 2 units	\$11,397 3 units	\$34,801 52 units	\$88,083 58 units
Ward			\$24,233 2 units	\$9,561 2 units	\$28,345 33 units	\$62,139 37 units
Unincorporated Boulder Co.	\$1,594,148 23 units	\$4,180,856 174 units		\$3,394,409 643 units	\$5,394,246 2,210 units	\$14,563,662 3,502
Total	\$8,061,819 102 units	\$7,971,418 343 units	\$4,521,021 370 units	\$10,675,946 1972 units	\$13,621,532 8621 units	\$44,851,736 11,860 units

Table 8: FEMA Damage Categories by Local Jurisdiction and LMI Households

Local Government	# Units Damaged	# LMI Households	# Non-LMI Households	# No Income Reported
Allenspark	22	11	9	2
Boulder	6462	1209	4278	975
Eldorado Springs	16	3	10	3
Erie	28	7	19	2
Hygiene	1	0	1	0
Jamestown	74	27	34	13
Lafayette	83	33	42	8
Longmont	1013	443	483	87
Louisville	79	20	52	7
Lyons	368	154	169	45
Nederland	46	12	28	6
Niwot	69	18	39	12
Pinecliffe	1	1	0	0
Raymond	1	1	0	0
Superior	58	7	43	8

Local Government	# Units Damaged	# LMI Households	# Non-LMI Households	# No Income Reported
Ward	37	12	17	8
Unincorporated Boulder Co.	3,502			3,502
Total	11,860	1958	5224	4,678

Based on the FEMA data above, of the 7,182 people reporting income, 37.5% were LMI households. Assuming the same ratio of unreported incomes applies, then of the 4,678 unreported incomes, 1,754 households are also LMI, bring the total of impacted LMI households to 3,712 or 31.2%.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The National Flood Insurance Program (NFIP) is administered by FEMA. Standard home insurance does not cover flooding. In 1968 Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. Per the Colorado Floods Situational Awareness Viewer on the FEMA website, 1,460 claims of residents of Boulder County have an estimated \$44,598,489 in NFIP housing payments.

Table 9: Boulder County NFIP Housing Claims Payments⁹

Geographic Area	Total NFIP Claims	Total Estimated Payments
Boulder	929	\$18,536,086
Erie	1	\$57,916
Jamestown	12	\$1,745,154
Lafayette	2	\$1,571
Longmont	53	\$3,872,251
Louisville	4	\$123,189
Lyons	66	\$3,718,102
Nederland	0	\$0
Superior	4	\$63,908
Unincorporated Boulder County	389	\$16,480,313
Total	1,460	\$44,598,489

UNITED STATES SMALL BUSINESS ADMINISTRATION

The Small Business Administration (SBA) provides disaster loan assistance to individuals and families whose property has been damaged or destroyed following a Presidential-declared disaster, and whose losses are not covered by insurance.

⁹ fema.maps.arcgis.com

Homeowners may apply for up to \$200,000 to replace or repair their primary residence. The loans may not be used to upgrade homes or make additions, unless required by local building code. Homeowners who make improvements that help prevent the risk of future property damage caused by a similar disaster may be eligible for up to a 20 percent loan increase above the real estate damage, as verified by SBA.

Renters and homeowners may borrow up to \$40,000 to replace or repair personal property – such as clothing, furniture, cars and appliances. Secondary homes or vacation properties are not eligible for these loans. Proceeds from insurance coverage on the home are deducted from the total damage estimate to determine the eligible loan amount. The SBA is not permitted to duplicate any benefits.

Home loans for more than \$25,000 in Presidential declarations must be secured with collateral to the extent possible. The SBA will ask the applicant for available collateral, but will not decline a loan for lack of collateral. A first or second mortgage on the damaged real estate is commonly used as collateral for an SBA disaster loan.

Table 10: Boulder County SBA Disaster Home Loan Applications

Local Government	Zip Code	Total SBA Apps	Total Apprv'd	Total \$ Approved	# Canceled by Applicant	\$ Canceled by Applicant	# SBA Declined	# Withdrawn
Allenspark	80510	9	2	\$26,700	0	0	5	2
Boulder	80301	1501*	776	\$24,241,400	267	\$7,901,200	488	236
	80302							
	80303							
	80304							
	80305							
	80306							
	80307							
	80308							
	80309							
	80310							
	80314							
Eldorado Springs	80025	5	4	\$271,200	1	\$1,800	0	0
Erie	80516	24	9	\$425,100	3	\$112,600	8	2
Hygiene	80533	7	2	\$70,300	1	\$56,300	3	2
Jamestown	80455	37	16	\$555,200	7	\$273,100	16	5
Lafayette	80026	39	12	\$502,700	5	\$416,400	15	12
Longmont	80501	560	256	\$10,003,400	107	\$4,614,900	240	64
	80502							
	80503							
	80504							
Louisville								

Local Government	Zip Code	Total SBA Apps	Total Apprv'd	Total \$ Approved	# Canceled by Applicant	\$ Canceled by Applicant	# SBA Declined	# Withdrawn
Lyons	80540	356*	134	\$5,183,100	49	\$2,198,100	133	88
Nederland	80466	8	3	\$100,300	2	\$88,300	4	1
Niwot	80544	8	2	\$50,800	1	\$33,400	4	2
Ward	80481	6	2	\$9,900	1	\$5,800	4	0
Additional	80020 80021 80027 80260 **	36	18	\$640,900	7	\$287,000	13	0
Total		2596	1236	\$42,081,000	451	\$15,988,900	933	419

*2 applications in progress (1 in Boulder and 1 in Lyons)

** Applicant has a FL zip code but received SBA loan

DETERMINING HOUSING DAMAGES USING THE MULTIPLIER METHODOLOGY

The Boulder County Unmet Needs Assessment has factored unmet need by both following the State of Colorado's and HUD's methodologies using a "Housing Multiplier" and a "Resiliency Multiplier" and gathering specific local data from each impacted community within Boulder County [covered later in this section]. As stated in the State's approved Action Plan for Disaster Recovery, "[T]he housing impact multiplier is a consideration not only for the extensiveness of the FEMA Individual Assistance inspection process, but it serves to account for those individuals who may not have applied for Federal disaster assistance or who were denied Federal disaster assistance. This is consistent with the *Calculating Unmet Needs* section of the Federal Register Volume 78, No. 43."

According to this methodology, Boulder County can get an estimate of the differences between FEMA damage assessments that only assess damage values that are limited to repairing only flood damage to the pre-existing condition; and the SBA damage assessments which provide a more extensive inspection and generally higher levels of assistance but address a relatively small proportion of the overall damaged units. Neither FEMA Individual Assistance (FEMA IA) nor SBA factor in resiliency measures to limit future damage from flooding therefore HUD has estimated that a 30% resiliency multiplier should be calculated based on damages (before factoring in housing assistance) to get approximate amount of funding needs.

Due to these factors, the State's Action Plan provides the following formula for creating the housing multiplier:

- 1) Determine the average value of the SBA award by dividing the total SBA assistance by the number of awarded units.
- 2) Determine the average value of the FEMA IA by dividing the total FEMA IA assistance by the number of units impacted.

- 3) To determine the multiplier, divide the average SBA amount by the average FEMA IA amount.
- 4) The multiplier is then applied to the total FEMA Verified Loss (FVL) as supplied by the FEMA IA division.
- 5) This yields a total housing impact.

See table below for calculation:

Table 11: Boulder County Housing Impact Estimate by Multiplier

Source	Total \$	Number of Units	Average \$
FEMA FVL	\$44,851,736	11,860	\$3,781
SBA Loans	\$42,081,000	1236	\$34,046
Multiplier	9.0		
Housing Impact	\$403,665,624		

RESILIENCY NEEDS

The Federal Register notice provides the following guidance for determining resiliency needs.

“CDBG Disaster Recovery Funds are often used to not only support rebuilding to pre-storm conditions, but also to build back much stronger. For the disasters covered by this Notice, HUD has required that grantees use their funds in a way that results in rebuilding back stronger so that future disasters do less damage and recovery can happen faster. To calculate these resiliency costs, HUD multiplied its estimates of total repair costs for seriously damaged homes, small businesses, and infrastructure by 30 percent. Total repair costs are the repair costs including costs covered by insurance, SBA, FEMA, and other federal agencies. The resiliency estimate at 30 percent of damage is intended to reflect some of the unmet needs associated with building to higher standards such as elevating homes, voluntary buyouts, hardening, and other costs in excess of normal repair costs.” [79 FR 31973, June 3, 2014]

Calculations based on this guidance using the State’s and HUD’s estimating methodologies are contained in the table below.

Table 12: Unmet Housing Need Estimation Based on the Multiplier Methodology

Housing Impacts	30% Resiliency	Total Damage & Resilience	Resources to Individuals*	Estimated Unmet Need
\$403,665,624	\$121,099,687	\$524,765,311	(\$145,668,744)	\$379,096,567

*See Table 12 below for resources used in this calculation

Determining Unmet Housing Need Based on Local Data

In contrast to the broad estimation approach practiced by HUD and the State in the aftermath of a disaster where the first immediate data available comes from the FEMA IA and SBA damage reports, Boulder County has undertaken an extensive unmet needs assessment based on data gathered from each of its local communities. HUD states in its Federal Register notices allocating the CDBG-DR funds, that they use the “best available” data from FEMA and SBA to calculate unmet needs at the time of the disaster. Based on this high level analysis, HUD allocates CDBG-DR to States and other impacted jurisdictions. However, HUD expects that once the funds are allocated, that additional unmet needs analysis will take place and that these identified unmet needs will be the platform for the Action Plan.

HUD is very clear on what data must be factored into the unmet needs assessment and states the following in the March 5, 2013 Federal Register.

“The Assessment must also take into account the various forms of assistance available to, or likely to be available to, affected communities and individuals (including estimated insurance and eligible FEMA, SBA, or other Federal assistance) to identify disaster recover needs that are not likely to be addressed by other sources of funds. Grantees must use the best, most recent available data (*e.g.*, from FEMA and SBA), cite data sources, and estimate the portion of need likely to be addressed by insurance proceeds, other Federal assistance or any other funding source.”

“Impacts must be described by type at the lowest geographic level practicable (*e.g.*, city/county level or lower if available...). In addition, a needs assessment must take into account the costs of incorporating mitigation and resiliency measures to protect against future hazards.” [78 FR 14333, March 5, 2013]

The sections below follow the specific requirements of estimating assistance available in Boulder County for housing assistance, impacts and unmet needs at the local level, and housing programs and projects to be assisted with CDBG-DR funds.

RESOURCES TO ASSIST WITH HOUSING NEEDS WITHIN BOULDER COUNTY

The table below shows resources that have been received on a county-wide basis in Boulder County.

Table 13: Boulder County Resources to Individuals

Resources to Individuals	Amount Received County-Wide
NFIP	\$44,598,489
FEMA IA	\$44,851,736
SBA	\$42,081,000
CDBG-DR Round 1	\$14,137,519
Total	\$145,668,744

HOUSING NEEDS REPORTED BY BOULDER COUNTY COMMUNITIES

Local governments throughout Boulder County provided community-specific data with estimated costs associated with the flood impacts and identifying their unmet community needs. Housing needs are defined for the purpose of this assessment to include housing assistance programs for households, housing recovery projects for replacement of flood damaged housing and to improve housing options with direct nexus to the flood, and resiliency housing which although not directly affected by the flood, makes Boulder County more resilient to future disasters by increasing affordable housing options in the flood impacted area.

There is a critical need for programs that provide citizens with housing assistance as they struggle to recover from the flood. These programs include assisting homeowners with repair or replacement of their flood damaged home, temporary rental assistance for displaced flood victims, down payment assistance for flood victims to purchase a new home, and clearance and demolition of dangerous structures.

Table 14: Summary of Reported County-Wide Estimated Household Assistance Programs and Recovery Projects

Community	Household Assistance Programs	Total Cost	Funding Resources	Unmet Need
Boulder County	Rehabilitation Program - (excluding Longmont)	\$7,000,000	\$2,000,000	\$5,000,000
Boulder County	Rental Assistance Program (24 months maximum)	\$500,000	\$500,000	\$0.00
Boulder County	Clearance and Demolition	\$250,000	\$250,000	\$0.00
Longmont	Housing Repair and Rehabilitation Assistance (only Longmont)	\$5,000,000	\$2,000,000	\$3,000,000
Longmont	Down Payment Assistance	\$2,250,000	\$250,000	\$2,000,000
Longmont	Rental Assistance Program (24 month maximum)	\$500,000	\$500,000	\$0.00
Subtotal Household Assistance Programs:		\$15,500,000	\$5,500,000	\$10,000,000
Community	Housing Recovery Projects	Total Cost	Funding Resources	Unmet Need
City of Boulder	Ponderosa Mobile Home Park – Replacement/Repair	\$12,480,000.00	\$1,480,000.00	\$11,000,000.00
Lafayette	BCHA Aspinwall Building Rehabilitation Costs	\$314,260.00	\$0.00	\$314,260.00
Jamestown	Habitat for Humanity Single family housing	\$2,100,000	\$2,100,000	\$0.00
Longmont	Spring Creek at Prairie Village	\$13,554,334.00	\$10,554,334.00	\$3,000,000.00

Lyons	Lyons Replacement Housing (50-70 units)	\$22,513,000	\$4,000,000	\$18,513,000
Subtotal Recovery Projects		\$50,961,594	\$18,134,334	\$32,827,260
Grand Total		\$66,461,594	\$23,634,334	\$42,827,260

The following Table shows projects that would expand affordable housing options in the flood impacted region possibly providing long term housing resiliency to the area:

Table 15: Housing Resiliency Projects by Community

Community	Housing Resiliency Project	Total Costs	Resources	Unmet Need
City of Boulder	Goldenwest Rehabilitation	\$42,000,000	\$36,000,000	\$6,000,000
City of Boulder	Development of new units - Trinity Commons	\$5,603,000	\$4,720,000	\$883,000
City of Boulder	Development of New Units - Spark West	\$13,500,000	\$11,800,000	\$1,700,000
City of Boulder	Development of New units - Palo Park	\$8,750,000	\$7,175,000	\$1,575,000
City of Boulder	Development of New Units – Confidential location	\$25,000,000	\$21,000,000	\$4,000,000
City of Boulder	Development of New Units-Waterview Apartments	\$20,000,000	\$16,400,000	\$3,600,000
Boulder County	Alkonis Property Development/Construction	\$60,000,000.00	\$52,800,000.00	\$7,200,000.00
Longmont	Poplar Grove (Habitat home ownership-20 units)	\$2,030,000	\$860,500	\$1,169,500
Longmont	Spring Creek at Prairie Village – Phase II	\$13,500,000.00	\$0.00	\$13,500,000.00
Longmont	The Suites Refinancing and Rehabilitation (Longmont)	\$8,200,000	\$8,015,000	\$185,000
Longmont	The Suites Campus Expansion (Longmont)	\$22,000,000.00	\$0.00	\$22,000,000
Longmont	Centennial Park Apartments	\$29,507,055	\$26,114,055	\$3,393,000
Longmont	Copper Peak Apartments	\$38,035,000	\$36,535,000	\$1,500,000
Longmont	Crisman Place Apartments	\$24,300,000	\$21,792,000	\$2,508,000
Longmont	Sugarmill Apartments	\$67,300,000	\$62,300,000	\$5,000,000
Nederland	Support for Resilient Housing Market; low-to-moderate renters (53 households/units)	\$15,900,000.00	\$10,000,000.00	\$5,900,000.00
Total		\$395,625,055	\$315,511,555	\$80,113,500

HOME ACCESS FOR BOULDER COUNTY

Many private roads, bridges, and culverts in Boulder County still need to be repaired as a result of the September 2013 flood. Many families had to be temporarily relocated until they can gain access to their homes to begin rebuilding their lives. Many remain displaced today as they cannot safely access homes due to damaged or destroyed bridges and culverts, even though their homes might have been undamaged. In December 2013, aerial photography showed approximately 115 bridges and culverts with some level of damage and approximately another 60+ culverts where the extent of damage could not be determined. Homeowners face a tremendous amount of costs in order to repair their bridges due to the repairs needing to meet the 100-year flood level requirement, and bridge and culvert repair usually is not covered by insurance or FEMA. According to Boulder County's Transportation Department, approximately 200 or more structures have damages to bridges, culverts, and private roads that range anywhere from \$30,000-100,000 per structure. Some owners have been fortunate enough to repair their access temporarily; however, the obstacle will be taking the repairs from temporary to permanent to meet county requirements. If residents cannot begin rebuilding their roads, bridges, and culverts; overtime, structures will become substandard and pose a threat to the residents and citizens within the communities¹⁰.

As of January 2015, current figures of unmet need for residents who have no access to their homes or only temporary access totaled more than \$12 million. In detail, each category associated with the unmet need dollar amounts needed is as follows:

Table 16: Private and Non-Maintained County Private Access Infrastructure Unmet Need

Home Access Activity	Cost	Units
FRAPs (Floodplain Residential Access Permit) & Other Permitted	\$2,290,000	34
No Permits	\$890,000	19
No Access	\$4,130,000	49
Other Home Access	\$2,460,000	30
Roads	\$2,500,000	N/A
TOTAL NEED	\$12,270,000	132
RESOURCES RECEIVED	(\$1,000,000)	
Home Access Program Unmet Need	\$11,270,000	

Source: Boulder County Transportation Department

¹⁰ Colorado United: Local Impact and Priority Survey, December 2013

HOUSING BUYOUT AND ACQUISITION

For the purposes of clearly identifying Housing Need from Infrastructure Need, the needs associated with housing buyout and mitigation has been added into the Housing Section. However; the Collaborative acknowledges that these activities are contained within the Action Plan as infrastructure activities for purposes of funding allocation.

Table 17: Total Housing Buyouts and Acquisition

Community	Activity	Total Cost	Resources	Unmet Need
Boulder County	HMGP 404 Buyouts	\$16,000,000	\$0.00	\$16,000,000
Jamestown	HMGP 404Buyouts	\$3,589,301	\$3,140,636	\$448,664
Lyons	HMGP 404 Buyouts	\$9,892,964	\$0.00	\$9,892,964
Buyout Subtotal		\$29,292,964	\$3,140,636	\$29,292,964
Boulder County	CDBG-DR Acquisitions in unincorporated county including Jamestown	\$15,000,000	\$2,000,000	\$13,000,000
Lyons	CDBG-DR Acquisitions	\$11,000,000	\$1,000,000	\$10,000,000
Acquisition Subtotal		\$26,000,000	\$3,000,000	\$23,000,000
Grand Total for Buyout and Acquisition		\$55,482,265	\$6,140,636	\$59,341,628

Table 18: Total Housing Unmet Need

Activity Type	Total Costs	Resources	Unmet Need
Household Assistance Programs	\$15,500,000	\$5,500,000	\$10,000,000
Housing Recovery Projects	\$50,961,594	\$18,134,334	\$32,827,260
Housing Resiliency Projects	\$395,625,055	\$315,511,555	\$80,113,500
Home Access	\$12,270,000	\$1,000,000	\$12,270,000
Home Buyout and Acquisition	\$55,482,265	\$6,140,636	\$59,341,628
Total	\$529,838,914	\$346,286,525	\$194,552,388

Boulder County and the cities of Boulder, Longmont, Louisville, and Lyons continue to have unmet needs in the Housing category. These unmet needs, as seen in the table above, range from administering programs, housing rehabilitation, home access, buyout, and new construction of public housing to match for other federal programs. In summary, Boulder County and its local governments have an unmet need of approximately **\$194,552,388** to administer and carryout the programs and activities listed above.

Challenges to Temporary and Long-Term Housing Post-Flood

Boulder County and its communities were extremely challenged to find temporary and long-term housing solutions for displaced residents following the 2013 flood. The rental market had begun facing a housing shortage going back to 2009. For example, an analysis of the Longmont Area Housing Market was conducted by CSI for the City of Longmont in July 2012. This study found that in Longmont there is a shortage of rental units for almost all income ranges, but especially for households at 50% or less of the AMI. There was a need for 1,449 additional affordable rental units below 50% AMI. Longmont had a very low overall vacancy rate of 2.4%, which is less than half of what is considered a healthy vacancy rate of 5%. The CSI rent survey was updated in November, after the floods, and found only 17 vacant units in 1,782 surveyed units, indicating a vacancy rate of 0.95%. The Longmont study went on to show that rents have increased by an average of 4.5% yearly since 2009. Affordable housing, especially for low and very low income residents is almost impossible to find.

With these types of housing challenges, Boulder County and its communities found many difficulties in assisting displaced persons following the flood. The staff at Housing Helpers partnered with the County to assist with finding housing options. The staff identified the following impediments to re-housing people following the flood:

- There was not a single point of contact for housing resources thus requiring people to call or email numerous government and private entities.
- Most leases are a minimum of 6 months and most displaced parties did not know the length of time they would need alternative housing thus requiring many people to pay for higher month-to-month corporate housing or hotels.
- Government agencies such as FEMA did not factor in the high cost for rental housing in the area and therefore did not provide adequate housing assistance for displaced persons.
- The extremely tight rental market made it almost impossible for people to find alternate housing in or near their community with many having to go to the Northwest Denver suburbs to find availability and placing them far away from work, schools, and childcare.
- Many faced high front-end costs in the form of application fees, damage deposits, pet deposits (when they could find housing allowing pets), utility fees and deposits, and cleaning fees.
- Many local apartment communities have occupancy restrictions limiting the number of people that can dwell together preventing families from sharing accommodations for short periods of time to get to more long-term housing solution.
- Many displaced persons also lost their household goods and needed furnished apartments thus resulting in higher rents when even available.

A year after the flood, these impediments continued to make assisting displaced persons a challenge. The earlier FEMA update confirms that affordable units for low to moderate income families are basically unavailable. More affordable rental units with flexible occupancy requirements are needed throughout Boulder County.

ANALYSIS TO IMPEDIMENTS TO FAIR HOUSING CHOICE

The Boulder County/Broomfield County HOME Consortium completed their analysis of impediments to fair housing choice in December 2014¹¹. The preparation of this report was guided by the Fair Housing Planning Guide issued by HUD's office of Fair Housing and Equal Opportunity and to a lesser extent the Proposed Rule Background Materials and Geospatial Tool. The analysis was primarily based on existing data sources for the quantitative component, informed by qualitative information gathered through two focus groups, an online survey, and information collected from the housing authorities. Quantitative data sources included:

- HUDCPD maps
- City and county staff and policy and regulation documents
- Denver Regional Equity Atlas
- American Community Survey, 2012 5-year estimates
- Affirmatively Furthering Fair Housing Mapping Tool
- American Housing Survey, 2011
- Boulder Valley School District Enrollment Map
- St. Vrain Valley School District Enrollment Map
- The Tax Foundation website
- Home Mortgage Disclosure Act (HMDA) data, 2013
- Denver Metro Area Fair Housing Center Rental Discrimination Study 2014
- BBC research and Consulting-prepared Market Analysis for City of Boulder, July 2013

The analysis determined the following impediments:

1. *Inadequate supply of accessible housing.* Data indicate accessibility features in the Denver MSA housing stock, the nearest MSA for which these data are available. Advocates for seniors and disabled report there is strong demand for more accessible housing.
2. *Housing supply does not meet the needs of families.* Though 60.7 percent of the housing stock in the area has three or more bedrooms, Longmont focus group attendees reported that there is an inadequate supply of housing available to families. The issue may not be the availability of 3+ bedroom housing for families, but instead the affordability, design and quality of that housing and competition with students and other groups of people who can afford higher rents.
3. *Housing Choice Voucher holders struggle to use their vouchers on the private market.* While source of income is not a protected class, Boulder Housing Partners places priority on families with children and disabled persons in their HCV lotteries. At the same time, it is challenging to use Housing Choice Vouchers in the Boulder/Broomfield market because there is an unaddressed gap between Fair Market Rent and the actual market rent in this area.
4. *High loan denial among racial minorities and those of Hispanic origin.* According to Home Mortgage Disclosure Act (HMDA) data, the rates of loan denial are much higher for Hispanic,

¹¹ *Analysis of Impediments to Fair Housing Choice including City of Boulder, Colorado; City and County of Broomfield, Colorado; and City of Longmont, Colorado, December 12, 2014.*

Black, African American, Native Hawaiian and Pacific Islander and Native American applicants compared to white non-Hispanic applicants.

5. *Market-Rate Rental Discrimination by Race, Familial Status and National Origin.* The Denver Metro Fair Housing Center published a study in February 2014 that found high rates of discrimination against protected classes.

These are issues that were in existence prior to the September Flood of 2013 and reviewed data does not indicate that these conditions were exacerbated or greatly increased by the flood. However, Boulder County and its communities are implementing CDBG-DR funded programs and activities which not only assist with flood recovery, but also assist with addressing some of the issues above. For example, over \$11 million of Round 1 CDBG-DR funds have been targeted for housing assistance programs [See Table 5] which include down payment assistance, temporary rental assistance, and new rental units for both Boulder County and Longmont Housing Authorities. Additionally, the housing rehabilitation programs not only address impacts from the flood, but will also address code and safety issues that were not a direct result of the flood but are due to deferred maintenance often associated with limited income households.

HOMELESS POPULATION

Homelessness is a complex issue that has increasingly become part of national, state and local communities' agendas. The commonality among the homeless is poverty and lack of housing. The lack of affordable housing has been identified nationally as a key driver of homelessness and the sustainable path out of homelessness. A lack of affordable housing, rising rates of poverty, reduced access to healthcare services and reductions in public assistance and rising daily living costs are putting more people at risk of homelessness. All of this was exacerbated by impacts to over 11,800 housing units county-wide with much of most severe impacts to affordable housing units and mobile home parks.

The most recent Point-In-Time (PIT) survey found 551 homeless respondents in Boulder County. The survey was conducted on Monday night, January 27, 2014. Of the 551 respondents, 310 were counted at a shelter; 89 were living on the street, under a bridge and/or in a car; 9 were in a hotel paid by a voucher; and 143 had time-limited transitional housing. The 2013 PIT survey; captured 1,106 respondents, which represents an approximate 50% decrease in the number counted from 2013 to 2014. The number of homeless in 2014 goes against the trend observed in Boulder County.

Point-In-Time (PIT) surveys of the homelessness situation in Boulder County are conducted on an annual basis. While these surveys help the local community understand the situation, the one consistent finding in all the research on homelessness is that surveys undercount homeless populations. People may enter and leave homelessness throughout the year, and the PIT survey is an approximate one day snapshot of homelessness in the Boulder County.

While there is not a defined financial need to assist Boulder County's homeless population in respect to the flood,, Boulder County's plan is to continue focusing on assisting both at-risk and homeless persons and get them into permanent housing solutions. Boulder County will continue to support local non-profit agencies that provide housing, mental health, case management, and other wrap-around services. Both Boulder County and the City of Longmont have received CDBG-DR allocations from the State to provide up to 24 months of temporary rental assistance. Additionally, the Longmont Housing Authority

and Boulder County Housing Authority have designated vouchers specifically for persons who have been impacted by the 2013 flood.

Summary

The flooding in September 2013 caused tremendous damage to homes and property in Boulder County. Residents forced from their homes during the initial flood still find themselves displaced due to damaged or destroyed homes or lack of access to their homes. After the flood waters receded, homes were evaluated and residents were faced with the need to repair and rehabilitate their dwellings and/or find ways to access their properties. Many others can find no safe developable place on their property to repair or rebuild their homes, as violent flood waters changed the geography of their land.

More than 11,800 properties sustained flood damages throughout the county and another 200 properties had damage to their private roads, bridges, or culverts. Based on the FEMA data, 31.2% of those households with damages totaling 3,712 families, are LMI households. . Repair of homes and home access remain critical unmet needs in Boulder County.

Finding short-term or long-term housing solutions is a challenge for Boulder County and its communities. Affordable housing for low and very low income families is a huge need for these communities. Communities throughout Boulder County and Boulder County itself continue to have an unmet need of \$194,552,388

Section 3 Infrastructure

Introduction

Boulder County experienced massive infrastructure damage in September 2013 as a result of record rainfall in the foothills of the Rocky Mountains. For the purpose of this assessment, the term infrastructure is intended to include traditional infrastructure, watershed, and agricultural projects. As the water worked its way down the mountains, the volume and velocity of water rushing through the St. Vrain River, Boulder Creek, South Boulder Creek, Little Thompson, Four Mile Creek, Four Mile Canyon Creek, Gold Run, and Left Hand Creek channels increased immensely in the steep, narrow mountain canyons. The extreme volume and speed caused substantial damage to the river channel itself, as floodwaters rechanneled the waterways and breached the creek, river and reservoir banks in multiple locations. Timber, vegetation, material from damaged structures and vehicles, and debris were deposited in and alongside the river, creating additional immediate hazards to life and safety during the flood and causing an increase in future flood risk by reducing the channel capacity.

The flood also impacted utility services throughout Boulder County. Customer's experienced sustained outages that began during the early moments of the flood and lasted from several days in Longmont to several months in Lyons and Jamestown until the utility companies could gain access and make repairs. Floodwaters did reach various wastewater treatment plants in cities in Boulder County causing service interruptions for two or more days and requiring resiliency and recovery projects to protect the sites from future damages.

In addition, approximately 150 miles of county roads were damaged or destroyed, particularly along mountain canyons where roads generally follow alongside creeks and rivers. The torrential floodwaters and concomitant debris shattered surfaces of roads and also scoured and undercut the land below roads and bridges. Temporary roads were built in the months following the disaster, with a majority of the permanent road repair work remaining to be completed.

METHODS OF CALCULATING UNMET INFRASTRUCTURE NEED

HUD's Federal Register Notices detail their methodology for determining unmet infrastructure needs when detailed local data is not available. The Federal Register notice states, "To *proxy* unmet infrastructure needs, HUD uses data from FEMA's Public Assistance program on the state match requirement. This allocation uses only a subset of the Public Assistance damage estimates reflecting the categories of activities most likely to require CDBG funding above the Public Assistance and state match requirement. Those activities are categories: C-Roads and Bridges; D-Water Control Facilities; E-Public Buildings; F-Public Utilities; and G-Recreational-Other. Categories A (Debris Removal) and B (Protective Measures) are largely expended immediately after a disaster and reflect interim recovery measures rather than the long-term recovery measures for which CDBG funds are generally used. Because Public Assistance damage estimates are available only statewide (and not county), CDBG funding allocated by the estimate of unmet infrastructure needs are sub-allocated to non-state grantees based on the share of housing and business unmet needs in each of the local jurisdictions." [79 FR 31973, June 3, 2014]

CALCULATING RESILIENCY NEEDS

The Federal Register Notice states, “CDBG Disaster Recovery funds are often used to not only support rebuilding to pre-storm conditions, but also to build back stronger. For the disasters covered by this Notice, HUD has required that grantees use their funds in a way that results in rebuilding back stronger so that future disasters do less damage and recovery can happen faster. To calculate these resiliency costs, HUD multiplied the estimates of total repair costs for seriously damaged homes, small businesses, and infrastructure by 30 percent. Total repair costs are the repair costs including costs covered by insurance, SBA, FEMA, and other federal agencies. The resiliency estimate at 30 percent of damage is intended to reflect some of the unmet needs associated with building to higher standards such as elevating homes, voluntary buyouts, hardening, and other costs in excess of normal repair costs.” [79 FR 31973, June 3, 2014]

Table 19: Calculation based on Boulder County Data: FEMA PA plus Resiliency Multiplier

FEMA Category Type	Communities	Districts	Subtotal	30% Resiliency	Total Need
Category C	120,910,000	34,590	120,944,590	\$36,283,377	157,227,967
Category D	17,763,177	482,450	18,245,627	\$5,473,688	23,719,315
Category E	3,391,755	761,092	4,152,848	\$1,245,854	5,398,702
Category F	10,269,945	3,572,594	13,842,539	\$4,152,762	17,995,300
Category G	79,840,520	1,201,670	81,042,190	\$24,312,657	105,354,847
Total	232,175,398	6,052,396	238,227,793	71,468,338	309,696,131

According to HUD’s methodology for estimating unmet infrastructure need and resiliency using FEMA data as a proxy, Boulder County has flood related unmet infrastructure and resiliency need of approximately **\$282,773,901**. Although this is a standard methodology for establishing a “proxy” for the amount of funds a Grantee will need in their recovery effort; this methodology excludes costs associated with creek repair and resiliency as FEMA does not fund creeks.

The data contained in this section of the document focuses on specific local damages and needs including creeks and watersheds and their resiliency. Based on local data analysis approximately a year and a half after the flood, the community specific data provided below estimates that infrastructure and resiliency unmet needs are approximately **\$698,869,474** for all infrastructure and resiliency types including FEMA PA, FHWA, Resiliency, HMGP, Special Districts, Creeks and Watersheds. The community-specific analysis is covered in the sections below.

Federal Emergency Management Agency

PUBLIC ASSISTANCE PROGRAM

Introduction

Funding from the FEMA PA program helps communities recover by providing a percentage of federal reimbursement for eligible, disaster-related costs for debris removal, emergency measures, and permanent work to repair and replace disaster-damaged public facilities. The cities within Boulder County have worked with FEMA to develop Project Worksheets (PWs) for projects to repair damages caused by the September 2013 flood. The Presidential decision for this disaster was a federal 75% cost share. The State of Colorado has agreed to provide one-half or more of the non-FEMA cost share, leaving the County entities responsible for the remainder of FEMA project cost.

Under the Recover Colorado Infrastructure Grant Program, CDBG-DR funds can be applied to pay for some or all of the local share. Additionally, funds can be used to pay to enhance or modernize existing PA projects where those enhancements are otherwise not FEMA PA ineligible.

Obligated funds are identified in Categories A through G. Each category is represented by different functions within the program. Categories A and B are considered Emergency Measures. Categories C through G are for the Permanent Work groups. A summary of funds received for each category of flood-related PA projects can be seen in a project cost table for each category and at the end of the infrastructure section.

Category A – Debris Removal

As a result of the September 2013 flood, tons of debris filled various locations in Boulder County especially watershed drainages and flooded residential areas. As an example, reservoirs were completely filled with rock, concrete, mud, sand and timber debris during the flood, eliminating any ability to divert water from various river and creek systems. Fast moving and rising floodwaters expanded beyond capacity uprooting trees and creating scattering vegetative debris along owned and maintained public property. Debris was so extreme that it caused an immediate threat to public health, life, and safety. In early 2014 FEMA granted authorization to Boulder County's local governments to conduct a debris removal program on private property to remove high hazard debris from the watersheds. The following table summarizes the cost of debris removal associated with the 2013 flood.

Table 20: FEMA Category A Damage and Cost of Repairs

Community	Project	Total Damage Cost	Federal Share	State and Other Resources	Community Unmet Need
Boulder Co	Debris Removal	\$500,572.66	\$375,429.49	\$62,571	\$62,571
Subtotal		\$500,573	\$375,430	\$62,571	\$62,571

City Boulder	Accelerated debris removal	\$2,257,652.96	\$1,869,245.45	\$194,203	\$194,203
Subtotal		\$2,257,653	\$1,869,245	\$194,203	\$194,203
Jamestown	Debris Collection and Disposal/Rolloffs	\$245,154.94	\$183,866.20	<u>\$30,644.37</u> <u>\$55,159.86</u>	<u>\$30,644.37</u> <u>\$6,128.87</u>
	Subtotal	<u>\$492,389</u> <u>\$245,155</u>	<u>\$370,567</u> <u>\$183,866</u>	<u>\$61,761</u> <u>\$55,160</u>	<u>\$61,761</u> <u>\$6,129</u>
Lafayette	Debris Removal Citywide	\$39,396.14	\$29,547.11	\$4,924.52	\$4,924.51
Lafayette	Debris Donated Resources	\$2,205	\$1,653.75	\$0.00	\$551.25
	Subtotal	\$41,601	\$31,201	\$4,925	\$5,476
Louisville	Debris Removal	\$330,871.00	\$248,153.00	\$41,358.00	\$41,359.00
Louisville	Donated Resources	\$2,922.41	\$2,191.81	\$0	\$730.60
	Subtotal	\$333,793	\$250,345	\$41,358	\$42,090
Longmont	Debris Removal	\$868,754.09	\$730,943.72	\$68,900.69	\$68,900.68
Subtotal	\$868,754	\$730,944	\$68,901	\$68,901	
Lyons	Debris Removal	\$1,005,224	\$753,918	\$226,175	\$25,131
	Subtotal	\$1,005,224	\$753,918	\$226,175	\$25,131
Nederland	Debris Removal	\$7,231.85	\$5,423.89	\$903.98	\$903.98
	Subtotal	\$7,232	\$5,424	\$904	\$904
	Grand Total	<u>\$5,507,210</u> <u>\$5,259,976</u>	<u>\$4,387,073</u> <u>\$4,200,372</u>	<u>\$660,799</u> <u>\$654,198</u>	<u>\$461,036</u> <u>\$405,404</u>

Category B – Emergency Protective Measures

Both before and after the flood in 2013, Boulder County agencies took action with numerous emergency protective measures (EPM). These protective measures include police and fire department evacuations, temporary repairs to restore electrical service, clearing roadways, and

emergency sewer pumping. A summary of the emergency protective measures and associated flood-related costs can be seen in the table below.

Table 21: FEMA Category B Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other Resources	Community Unmet Need
City Boulder	Parks and Recreation	\$27,962.75	\$20,972.06	\$3,495.34	\$3,495.35
City Boulder	Emergency Safety Inspections	\$17,826.48	\$13,369.86	\$2,228.31	\$2,228.31
City Boulder	Emergency Street Sweeping	\$38,013.57	\$28,510.18	\$4,751.70	\$4,751.69
City Boulder	61 st Street & NIST Water Lines	\$124,956.90	\$93,717.68	\$15,619.61	\$15,619.61
City Boulder	Emergency Protective Measures Police	\$279,442.85	\$209,582.14	\$34,930.35	\$34,930.36
City Boulder	Emergency Communications	\$2,971.96	\$2,228.97	\$371.50	\$371.49
City Boulder	Emergency Protective Measures [Fire Dept.]	\$106,498.09	\$79,873.57	\$13,312.26	\$13,312.26
City Boulder	Emer. Prot. Meas. [Limited Threats in Streams]	\$3,421,511.00	\$2,566,133.25	\$427,688.88	\$427,688.88
City Boulder	Emergency Protective Measures [Transp. Dept.]	\$59,685.59	\$44,764.19	\$7,460.70	\$7,460.70
City Boulder	Emerg. Protective Measures [Utilities Dept.]	\$58,317.58	\$43,738.19	\$7,289.70	\$7,289.69
City Boulder	Emergency Protective				

	Measures [OSMP]	\$54,196.39	\$40,647.29	\$6,774.55	\$6,774.55
City Boulder	Donated Resources	\$53,491.99	\$40,118.99	\$0	\$13,373
Subtotal		\$4,244,875	\$3,183,656	\$523,923	\$537,296
Boulder County	High hazard debris	\$4,141,563	\$2,250,000	\$375,000	\$375,000
Boulder County	St Vrain Temporary Breach Repairs (Breaches 1, 2, and 7)	\$589,816.33	\$530,539	\$88,421	\$88,421
Boulder County	Emergency Protective Measures – Lyons Fire	\$239,522.38	\$179,641.50	\$29,940	\$29,940
Boulder County	Emergency Protective Measures	\$1,650,234.16	\$1,237,675.50	\$206,279.25	\$206,279.25
Boulder County	Donated Resources	\$41,909.69	\$31,431.75	\$5,238.63	\$5,238.62
Subtotal		\$6,663,046	\$4,229,288	\$704,879	\$704,879
Jamestown	Emergency Protective Measures (2 PWs)	\$130,973.00	\$98,229.75	\$16,371.63 \$29,468.93	\$16,371.63 \$3,274.32
Jamestown	Water Treatment Facility Repair	\$1,700.00	\$1,275.00	\$212.50	\$212.50
Jamestown	Emergency James Creek Channel Debris Removal	\$124,362.00	\$93,271.50	\$15,545.25	\$15,545.25
Jamestown	Emergency Road Repairs	\$117,168.00	\$87,876.00	\$14,646.00	\$14,646.00
Jamestown	Donated Services	\$5,704.00	\$4,278.00	\$713.00	\$713.00
Subtotal		\$130,973 \$379,907	\$98,230 \$284,930	\$16,372 \$84,196	\$16,372 \$10,781
Lafayette	Emergency Protective Measures	\$32,891.17	\$23,175.33	\$3,862.56	\$5,853.28
Lafayette	Instream Hazardous Removal	\$113,806.55	\$85,354.91	\$14,225.82	\$14,225.82

Subtotal		\$144,707	\$108,530	\$18,088	\$18,088
Louisville	In-Stream Hazardous Removal	\$356,401.00	\$267,301.00	\$44,550.00	\$44,550.00
Louisville	Emergency Protective Measures	\$5,434	\$4075.84	\$679.31	\$679.31
Subtotal		\$361,836	\$271,377	\$45,229	\$45,229
Nederland	Emergency Protective Measures	\$8,794.93	\$6,596.20	\$1,099.37	\$1,099.37
Subtotal		\$8,795	\$6,596	\$1099	\$1099
Longmont	Police emergency protective measures	\$294,018	\$220,514	\$36,752	\$36,752
Longmont	Fire emergency protective measures	\$89,058	\$66,794	\$11,132	\$11,132
Longmont	LPC emergency protective measures	\$289,001	\$171,987	\$28,665	\$28,664
Longmont	PWNR emergency protective measures	\$187,184	\$140,388	\$23,398	\$23,398
Longmont	Remove large debris under bridges (L&M)	\$152,167	\$112,542	\$18,757	\$20,868
Longmont	Road emergency road repair and Longmont Dam Dredging	\$1,345,493.80	\$1,009,120.35	\$168,186.73	\$168,186.73
Longmont	Remove vegetative debris from Inlet of Ralph Price	\$850,000	\$577,775	\$96,296	\$175,929
Longmont	Kanemoto pump station removal/bank stabilization	\$76,544	\$57,408	\$9,568	\$9,568
	EPM - Channel hazard reduction	\$597,004.42	\$447,753.32	\$74,625.55	\$74,625.55

Longmont	non aggregate (v.0) and aggregate (v.1)				
Longmont	EPM – Pumping - Longmont	\$1,695,897.96	\$1,271,923.47	\$211,987.25	\$211,987.25
Subtotal		\$5,434,940	\$4,076,205	\$679,368	\$679,368
Lyons	Emergency Protective Measures	\$5,039,161	\$3,779,370	\$1,133,811	\$125,978
Subtotal		\$5,039,161	\$3,779,370	\$1,133,811	\$125,978
Grand Total		\$22,028,332 <u>\$22,277,266</u>	\$15,573,253 <u>\$15,759,953</u>	\$3,122,769 <u>\$3,190,593</u>	\$2,128,310 <u>\$2,122,720</u>

In several instances, emergency protective measures taken by the local governments to protect against flooding were not funded or portions of the projects were considered ineligible for FEMA PA funding.

Category C – Roads Systems and Bridges

Flooding in 2013 had a major impact on local bridges and roadways in numerous locations, including damage or destruction of approximately 150 miles of county roads and many bridges. Many roads and bridge structures were washed out that have to be repaired. By repairing these road systems and bridges, it will bring them up to City and County standards ensuring that they meet requirements that will minimize future flooding and damage. The following table summarizes the cost of roadway and bridge repairs associated with the 2013 flood.

Table 22: FEMA Category C Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other Resources	Community Unmet Need
City Boulder	City of Boulder Road Repair	\$7,578.35	\$5,683.76	\$947.29	\$947.30
City Boulder	City of Boulder Road Repair	\$213,581.16	\$160,185.87	\$26,697.64	\$26,697.65
City Boulder	Roads and Bridges - Multi Use Paths	\$128,727.54	\$96,545.66	\$16,090.94	\$16,090.94
City Boulder	City of Boulder Road Repair	\$24,927.70	\$18,695.78	\$3,115.96	\$3,115.96
City Boulder	Road Repair	\$48,385.59	\$36,289.19	\$6,048.20	\$6,048.20

City Boulder	Road Repairs [Citywide]	\$64,765.32	\$48,573.99	\$8,095.67	\$8,095.66
City Boulder	Road & Culvert Repairs	\$169,492.09	\$127,119.07	\$21,186.51	\$21,186.51
City Boulder	Road Repairs [Gregory Creek Area]	\$174,873.56	\$131,155.17	\$21,859.19	\$21,859.20
City Boulder	Road and Bridge Repairs CAT C - [OSMP – Road and Bridges]	\$41,459.95	\$31,094.96	\$5,182.50	\$5,182.49
City Boulder	CAT C - Road and Path Repairs	\$59,130.36	\$44,347.77	\$7,391.30	\$7,391.29
Subtotal		\$932,922	\$699,691	\$116,615	\$116,615
Jamestown	Culvert Replacement/Repair	\$96,736.00	\$72,552.00	\$12,092.00 <u>\$21,765.60</u>	\$12,092.00 <u>\$2,418.40</u>
Jamestown	Roads and Bridge – Engineering Estimate	\$349,543.53 <u>\$5,631,047.49</u>	\$262,157.65 <u>\$4,223,285.62</u>	\$43,692.94 <u>\$1,266,985.69</u>	\$43,692.94 <u>\$140,776.18</u>
Jamestown	Minor Road and Drainage Ditch Damages	\$94,316.31	\$70,737.23	\$11,789.54 <u>\$21,221.17</u>	\$11,789.54 <u>\$2,357.91</u>
Jamestown	Roads and Bridge – Main St. Bridge	\$7,041.50	\$5,281.13	\$880.19 <u>\$1,584.34</u>	\$880.19 <u>\$176.03</u>
Jamestown	Roads and Bridge – CR94	\$630,985.62	\$473,239.21	\$78,873.20 <u>\$141,971.76</u>	\$78,873.20 <u>\$15,774.64</u>
Subtotal		\$1,253,168 <u>\$6,460,127</u>	\$939,876 <u>\$4,845,095</u>	\$156,646 <u>\$1,453,529</u>	\$156,646 <u>\$161,504</u>
Louisville	Road Repair	\$14,993.35	\$11,245.01	\$1,874.17	\$1,874.17
Subtotal		\$14,993	\$11,245	\$1,874	\$1,874
Lafayette	Road Washout and Sidewalk Repair	\$19,766.89	\$14,825.17	\$2,470.86	\$2,470.86
Subtotal		\$19,767	\$14,825	\$2,471	\$2,471
Longmont	Gravel Roadway Repair	\$53,966.16	\$40,475.00	\$6,745.77	\$6,745.77
Longmont	Roadway and Trail Repairs	\$422,806.76	\$317,105.07	\$52,850.85	\$52,850.85

Longmont	Damaged Roads and Bridges-Replace culvert	\$3,017,633.00	\$2,263,224.75	\$377,204.12	\$377,204.12
Subtotal		\$3,494,406	\$2,620,805	\$436,801	\$436,800
Lyons	2 nd Ave. Bridge PW613/LY27	\$2,842,635	\$2,131,976	\$639,593	\$71,066
Lyons	Damaged Roads-McConnell Drive	\$2,221,461	\$1,666,096	\$499,829	\$55,537
Subtotal		\$5,064,096	\$3,798,072	\$1,139,422	\$126,602
Nederland	Damaged Roadways	\$530,035	\$227,000	\$32,500	\$270,000
Subtotal		\$530,035	\$227,000	\$32,500	\$270,000
Boulder County	Road Repair-17 project worksheets	\$104,716,392	\$78,537,294	\$13,089,549	\$13,089,549
Subtotal		\$104,716,392	\$78,537,294	\$13,089,549	\$13,089,549
Grand Total		<u>\$115,703,041</u> <u>\$120,910,000</u>	<u>\$86,777,281</u> <u>\$90,682,500</u>	<u>\$14,969,290</u> <u>\$16,266,173</u>	<u>\$13,956,471</u> <u>\$13,961,328</u>

In several instances, repairs to damaged roadways were not funded or portions of the projects were considered ineligible for FEMA PA funding.

Category D – Water Control Facilities

As a result of the flooding in September 2013, creeks, stream banks, culverts, water intake structures, irrigation systems and golf courses suffered damage from extreme water flow and debris. By restoring and repairing sections of the creeks, stream banks, and culverts, it will mitigate threats to properties located within the floodplain. The following table summarizes the cost of water control facility projects associated with the 2013 flood.

Table 23: FEMA Category D Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other Resources	Community Unmet Need
City Boulder	Man-made Channel Repair [Three Sites]	\$778,875.33	\$584,156.50	\$97,359.41	\$97,359.42
City Boulder	Culvert Repairs				

	[Gregory Creek/Iris Ave]	\$427,345.81	\$320,509.36	\$53,418.22	\$53,418.23
City Boulder	[OSMP – Flatirons Vista] – Dam reservoir	\$13,899.00	\$10,424.25	\$1,737.38	\$1,737.38
City Boulder	Man-Made Channel repair [OSMP - Ditches –Head gates	\$81,445.57	\$61,084.18	\$10,180.70	\$10,180.69
City Boulder	[OSMP – KOA Lake]	\$6,125.00	\$4,593.75	\$765.63	\$765.62
City Boulder	Streams-Infrastructure	\$1,217,369.00	\$913,026.75	\$152,171.12	\$152,171.13
Subtotal		\$2,525,060	\$1,893,795	\$315,632	\$315,632
Jamestown	Irrigation Ditch Intake Replacement	\$123,336.52	\$92,502.39	\$15,417.07 <u>\$27,750.72</u>	\$15,417.07 <u>\$3,083.40</u>
Subtotal		\$123,337	\$92,502	\$15,417 <u>\$27,751</u>	\$15,417 <u>\$3,083.40</u>
Lafayette	Water Intake Structure Repair	\$14,098.53	\$10,573.90	\$1,762.32	\$1,762.32
Subtotal		\$14,099	\$10,574	\$1,762	\$1,762
Longmont	Facility Channel Restoration	\$2,841,123.72	\$2,130,842.79	\$355,140.47	\$355,140.47
Longmont	Ralph Price Dredging	\$5,428,766	\$4,071,574	\$678,596	\$678,596
Longmont	Water Control Facilities	\$89,608.21	\$67,206.16	\$11,201.03	\$11,201.03
Subtotal		\$8,359,498	\$6,269,623	\$1,044,938	\$1,044,938
Louisville	Water Intake Building	\$24,249	\$18,187	\$3,031	\$3,031

Louisville	Water Control Facilities	\$152,962.35	\$114,721.76	\$19,120.29	\$19,120.29
Subtotal		\$177,212	\$132,909	\$22,151	\$22,151
Boulder County	Berms	\$69,308.57	\$51,981.43	\$8,664.00	\$8,664.00
Boulder County	Water Control Facilities (Lined and Unlined)	\$1,894,663.55	\$1,420,997.66	\$236,832.94	\$236,832.94
Boulder County	NRCS-Emergency Watershed Protection Projects	\$4,600,000	\$4,025,000	\$0.00	\$575,000
Subtotal		\$6,563,972	\$5,497,979	\$245,497	\$820,497
Grand Total		\$17,763,177	\$13,897,383	\$1,645,398 <u>\$1,657,732</u>	\$2,220,398 <u>\$2,208,064</u>

Category E – Buildings, Contents, and Equipment

Several of the cities and county's public buildings and structures were flooded and damaged. Buildings had to be rehabilitated and cleaned due to water damage. Repairs to buildings include but are not limited to drywall being replaced and painted, air conditioners being replaced and duct-work being cleaned. Equipment, fleet vehicles, fences, building contents, and public restrooms were destroyed by water and also have to be replaced. The following table describes the Category E projects and summarizes costs that the cities, towns, and county are responsible for partially because of ineligible project costs.

Table 24: FEMA Category E Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other Resources	Community Unmet Need
City of Boulder	Building Repair & Equipment [N Boulder Rec Cen.]	\$127,859.14	\$95,894.36	\$15,982.39	\$15,982.39
City of Boulder	Building Repair [West Senior Center]	\$48,531.51	\$36,398.64	\$6,066.44	\$6,066.44
City of Boulder	Building Repair [South Boulder	\$3,249.12	\$2,436.84	\$406.14	\$406.14

	Rec. Center]				
City of Boulder	Building Repair [Fire Station # 4]	\$27,126.50	\$20,345.59	\$3,390.46	\$3,390.46
City of Boulder	Public Building (Main Library Equipment)	\$6,894.05	\$5,170.54	\$861.76	\$861.75
City of Boulder	Building Repair [Fire Station #1]	\$19,545.25	\$14,658.94	\$2,443.16	\$2,443.15
City of Boulder	Building Repair [Iris Center]	\$32,745.31	\$24,558.99	\$4,092.16	\$4,092.16
City of Boulder	Building Repair [Reynolds Library]	\$62,807.64	\$47,105.73	\$7,850.96	\$7,850.95
City of Boulder	Vehicle Repairs [Fleet Vehicles –Storm Damage]	\$8,217.23	\$6,162.92	\$1,027.16	\$1,027.15
Subtotal		\$336,976	\$252,733	\$42,121	\$42,121
Nederland	Bldgs/Contents Community Center Facility and French Drain installation	\$4,500	\$3,375	\$562.50	\$562.50
Subtotal		\$4,500	\$3,375	\$563	\$562
Jamestown	Public Buildings – Fire Station	\$47,664.23 <u>\$63,552.31</u>	\$35,748.17 <u>\$47,664.23</u>	\$5,958.03 \$14,299.27	\$5,958.03 <u>\$1,588.81</u>
Subtotal		\$47,664 <u>\$63,552</u>	\$35,748 <u>\$47,748</u>	\$5,958 \$14,299.27	\$5,958 <u>\$1,589</u>
Lafayette	Building Component Repair	\$16,109.74	\$12,082.31	\$2,013.71	\$2,013.72
Subtotal		\$16,110	\$12,082	\$2,014	\$2,014
Lyons	Building Repair-library, town hall, storage	\$1,538,420.35	\$1,153,815.26	\$346,144.58	\$38,460.51

Lyons	Vehicle replacement	\$546.25	\$409.89	\$122.97	\$13.66
Subtotal		\$1,538,967	\$1,154,225	\$346,268	\$38,474
Longmont	Building Replacement Repair (#352)	\$5,725.75	\$4,294.31	\$715.72	\$715.72
Longmont	Park Dept. Building Repair (#947)	\$7,492.82	\$5,619.62	\$936.60	\$936.60
Longmont	Equipment (vehicles/fire truck/boat)	\$52,083	\$39,063	\$6,510	\$6,510
Subtotal		\$65,303	\$48,977	\$8,163	\$8,163
Boulder County	Buildings Replacement/Repair	\$1,366,348	\$1,024,761	\$170,793.50	\$170,793.50
Subtotal		\$1,366,348	\$1,024,761	\$170,793.50	\$170,794
Grand Total		\$3,375,867	\$2,531,900	\$575,880	\$268,087
		\$3,391,755	\$2,543,900	\$584,221	\$263,717

Category F – Utilities

Many of the cities and towns critical utilities were compromised with the 2013 flood. Portions of the North and South St. Vrain Pipelines were damaged and destroyed and sewer, waterlines, and electrical systems need to be repaired. The following table summarizes the cost of utility projects associated with the 2013 flood.

Table 25: FEMA Category F Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other Resources	Community Unmet Need
City Boulder	Public Utilities (Sewer & Storm Drain Repair)	\$365,305.45	\$273,979.09	\$45,663.18	\$45,663.18
City Boulder	Public Utilities [Boulder Canyon Water Lines]	\$382,633.86	\$286,975.40	\$47,829.23	\$47,829.23

City Boulder	Public Utilities [61 St.Waste Interceptor]	\$214,918.00	\$161,188.50	\$26,864.75	\$26,864.75
City Boulder	CAT F – Utilities Repair	\$269,967.00	\$202,475.25	\$33,745.87	\$33,745.88
City Boulder	Hydro Plant	\$89,349.23	\$67,011.92	\$11,168.65	\$11,168.66
City Boulder	IBM and Headwork WWTF	\$130,934.04	\$98,200.53	\$16,366.75	\$16,366.76
City Boulder	Utility Repair [Storm Drainage system]	\$125,038.49	\$93,778.87	\$15,629.81	\$15,629.81
Subtotal		\$1,578,146	\$1,183,610	\$197,268	\$197,268
Jamestown	Water Distribution System Repair	\$1,728,558.91	\$1,296,419.18	\$216,069.86 <u>\$388,925.75</u>	\$216,069.86 <u>\$43,213.98</u>
Jamestown	Water Treatment Plan	\$1,012,035.10	\$759,026.33	\$48,384.04 \$27,707.90	\$48,384.04 \$25,300.88
Jamestown	Public Utilities – Easements	\$22,485.00	\$16,863.75	\$3,023.13 \$5,059.13	\$3,023.13 \$562.12
Subtotal		\$2,763,079	\$2,072,309	\$267,477 <u>\$621,693</u>	\$267,477 <u>\$69,077</u>
Lafayette	Waste Water Treatment Facility Repair	\$19,986.34	\$14,989.76	\$2,498.29	\$2,498.29
Subtotal		\$19,986	\$14,990	\$2,498	\$2,498
Louisville	Public Utilities- Water Main Repairs	\$3,201.18	\$2,400.88	\$400.15	\$400.15
Subtotal		\$3,201	\$2,401	\$400	\$400
Longmont	North and South St. Vrain	\$1,641,791	\$1,231,343	\$205,224	\$205,224

	Pipelines				
Longmont	Sanitary Sewer Repair (F, Lykins)	\$919,170	\$689,378	\$114,896	\$114,896
Longmont	Wastewater Treatment Plant	\$271,750	\$203,812	\$33,969	\$33,969
Longmont	Nelson Flanders WTP	\$193,446	\$145,084	\$24,181	\$24,181
Longmont	Waterline repairs/insulation /LPC boring/St. Vrain Pump station/man hole	\$80,296	\$60,222	\$10,037	\$10,037
Longmont	Sanitary Sewer Repair (Trunk 3)	\$687,623.00	\$515,717.00	\$85,953.00	\$85,953.00
Subtotal		\$4,034,891	\$3,026,168	\$504,361	\$504,361
Lyons	Utilities (six PWs combined)	\$1,441,877	\$1,081,408	\$324,422	\$36,047
	Subtotal	\$1,441,877	\$1,081,408	\$324,422	\$36,047
Nederland	Sewer line Repairs	\$428,765	\$321,573.75	\$53,595.63	\$53,595.62
Subtotal		\$428,765	\$321,574	\$53,596	\$53,596
	Grand Total	\$10,269,945	\$7,702,459	\$1,350,023 \$1,704,239	\$1,061,648 \$863,248

Category G – Parks, Recreation, and Other Facilities

Many city, town, and county parks, recreational, community centers and other facilities were damaged during the September 2013 flooding requiring restoration. The following table summarizes the cost of parks, recreation, and other facility projects associated with the 2013 flood.

Table 26: FEMA Category G Damage and Cost of Repairs

Community	Project	Total Cost	Federal Share	State and Other	Community Unmet Need
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				Resources	
City Boulder	Facility Repair [Open Space Fences]	\$282,505.38	\$211,879.04	\$35,313.17	\$35,313.17
City Boulder	Repair Remediation Site [Valmont Butte]	\$22,868.42	\$17,151.32	\$2,858.55	\$2,858.55
City Boulder	Facility Repair [13 Sites - Park grounds]	\$244,059.35	\$183,044.51	\$30,507.42	\$30,507.42
City Boulder	Facility Repair [Knollwood Park Tennis Courts]	\$144,277.50	\$108,208.13	\$18,034.68	\$18,034.69
City Boulder	Facility Repair [Elmer's Two Mile Park]	\$39,232.39	\$29,424.29	\$4,904.05	\$4,904.05
City Boulder	Facility Repair [Bear Creek Park]	\$142,663.25	\$106,997.44	\$17,832.90	\$17,832.91
City Boulder	Facility Repair [Open Space Trails and Fences]	\$2,172,168.88	\$1,629,126.67	\$271,521.10	\$271,521.11
City Boulder	Facility Repair [Flatirons Golf Course]	\$67,348.54	\$50,511.41	\$8,418.57	\$8,418.56
City Boulder	Facility Repair [Wonderland, Maxwell Lake, Arrowwood]	\$25,179.95	\$18,884.96	\$3,147.50	\$3,147.49
City Boulder	[OSMP – Trailheads]	\$185,163.27	\$138,872.45	\$23,145.41	\$23,145.41
City Boulder	Facility Repair– (15 Open Space Trails)	\$1,518,837.00	\$1,139,128.00	\$189,854.00	\$189,854.00
City Boulder	Facility Repair [Evert Pierson Fishing Park]	\$187,712.42	\$140,784.32	\$23,464.05	\$23,464.05
City Boulder	Recreational & Other [Boulder Reservoir]	\$11,205.15	\$8,403.86	\$1,400.65	\$1,400.64
Subtotal		\$4,760,717	\$3,570,537	\$595,090	\$595,090

Lafayette	Recreation & Other Facility Replacement / Repair	\$652,035.11	\$489,026.33	\$81,504.39	\$81,504.39
Subtotal		\$652,035	\$489,026	\$81,504	\$81,054
Louisville	Golf Course Rebuild	\$2,039,190.00	\$1,529,393.00	\$254,890.00	\$254,890.00
Louisville	Recreation and Other Irrigation	\$784,070.00	\$588,052.50	\$98,008.75	\$98,008.75
Louisville	Open Space and Trails*	\$463,533.91	\$347,650.43	\$57,941.74	\$0.00
Subtotal		\$3,286,794	\$2,465,096	\$410,849	\$352,908
Boulder County	LoBo Trail Concrete (Transportation / concrete piece)	\$62,107.01	\$46,640.01	\$7,733.50	\$7,733.50
Boulder County	LoBo Trail (trails piece) *	\$118,501.30	\$88,875.98	\$14,812.66	\$14,812.66
Boulder County	Imel Concrete	\$18,979.45	\$14,243.59	\$2,372.00	\$2,363.86
Boulder County	Boulder Canyon Trail	\$180,128.00	\$135,096.00	\$22,516.00	\$22,516.00
Boulder County	Heil Ranch Trailhead/Trail	\$136,677.90	\$102,507.90	\$17,085.00	\$17,085.00
Boulder County	Regional Trails, Mtns and Plains	\$248,700.16	\$186,525.12	\$31,088.00	\$31,087.04
Boulder County	Anne U. White Trail	\$250,190.00	\$187,642.50	\$31,274	\$31,273.50
Boulder County	Pella Crossing	\$3,493,104.15	\$2,619,828.11	\$436,638.00	\$436,638.04
Boulder County	Fencing	\$574,117.32	\$430,587.32	\$71,765.00	\$71,765.00
Boulder County	Four Mile Bridge (connector)	\$58,407	\$43,805.25	\$7,301	\$7,301

Boulder County	Hall II (access road)	\$258,732.70	\$194,049.53	\$32,342.00	\$32,342.00
Boulder County	Walden Ponds	\$540,179.00	\$405,134.25	\$67,522.00	\$67,522.00
Boulder County	A-Frame and West Lake	\$1,961,605.00	\$1,471,203.75	\$245,201.00	\$245,201.00
Boulder County	Buffalo Gulch	\$43,262.50	\$20,625	\$3,437.50	\$19,200.00
Boulder County	Assay Office Grounds	\$83,995.00	\$62,996.25	\$10,499.00	\$10,499.00
Boulder County	Highland Rubicon	\$39,776.54	\$29,832.41	\$4,972.00	\$4,972.00
Boulder County	Lake 4 **Boulder County's half, other half in Table 20, St. Vrain and Left Hand WCD	\$10,336,356.00 \$10,336,356.00	\$7,752,267.00 \$7,752,267.00	\$1,292,045.00 \$1,292,045.00	\$1,292,045 \$1,292,045
Subtotal		\$18,404,819.03	\$13,791,859.97	\$2,298,603.66	\$2,314,356.60
Longmont	Miscellaneous Trails Repairs	\$490,689.00	\$317,105.00	\$52,851.00	\$120,733.00
Longmont	Golden Ponds Park Trail Restoration Project	\$404,358.00	\$303,268.00	\$50,545.00	\$50,545.00
Longmont	Fire Training Center	\$22,616	\$16,962	\$2,827	\$2,827
Longmont	Kanemoto Park / Pool facility	\$368,003.66	\$276,002.74	\$46,000.46	\$46,000.46
Longmont	Twin Peaks Golf Course repair	\$258,426.00	\$193,820.00	\$32,303.00	\$32,303.00
Longmont	St. Vrain Greenway Repairs to Trail and Ponds at Multiple Areas	\$29,536,647.50	\$22,152,485.63	\$3,692,080.94	\$3,692,080.93
Longmont	Recreation Building	\$460,268.36	\$345,201.27	\$57,533.55	\$57,533.55

	Replacement/ Repair Parks				
Subtotal		\$31,050,320	\$23,287,740	\$3,881,290	\$3,881,290
Lyons	Parks and Rec PW1078/LY 20	\$21,497,351.00	\$16,123,013.25	\$4,836,903.98	\$5,037,433.77
Lyons	Engineering Hydro Survey (PW 686)	\$113,939.40	\$85,454.55	\$25,636.37	\$2,848.48
Subtotal		\$21,611,290	\$16,208,467	\$4,862,541	\$540,282
Jamestown	Parks	\$1,600,000	\$1,200,000	\$167,750	\$232,250
Jamestown	Jamestown Center Square and Elysian Park	\$74,545.07	\$55,908.80	\$16,772.64	\$1,863.63
Subtotal		\$1,600,000 \$74,545	\$1,200,000 \$55,909	\$167,750 \$16,773	\$232,250 \$1,864
	Grand Total	\$79,840,520	\$59,868,636	\$12,146,650	\$7,767,294

*GoCo match

** Insurance funds

FEMA PA TOTALS BY CATEGORY AND COMMUNITY

The Table below shows the total unmet need by FEMA category and individual community. The percent of each communities need compared to the total unmet need is calculated in the table below.

Table 27: Total Damages per FEMA Category

Loc	Cat A \$	Cat B \$	Cat C \$	Cat D \$	Cat E \$	Cat F \$	Cat G \$	Total Damage \$
BoC	500,573	6,663,046	104,716,392	6,563,972	1,366,348	-	18,404,819	138,215,149
CiBo	2,257,653	4,244,875	932,922	2,525,060	336,976	1,578,146	4,760,717	16,636,348
JT	245,155	379,907	6,460,127	123,337	63,552	2,763,079	74,545	10,109,702
Laf	41,601	144,707	19,767	14,099	16,110	19,986	652,035	908,305
Lou	333,794	361,836	14,993	177,212	-	3,201	3,286,794	4,177,830
Lon	868,745	5,434,940	3,494,406	8,359,498	65,303	4,034,891	31,050,320	53,308,102
Ly	1,005,224	5,039,161	5,064,096	-	1,538,967	1,441,877	21,611,290	35,700,615

Ned	7,232	8,795	207,298	-	4,500	428,765	-	656,589
Tot	5,259,976	22,277,267	120,910,000	17,763,177	3,391,755	10,269,945	79,840,520	259,712,641

Table 28: Total FEMA PA Damages Community

Community	Total Damages	Percent of Damages
Boulder County	138,215,149	53.2%
City of Boulder	16,636,348	6.4%
Jamestown	10,109,702	3.9%
Lafayette	908,305	0.3%
Longmont	53,308,102	20.5%
Louisville	4,177,830	1.6%
Lyons	35,700,615	13.7%
Nederland	656,589	0.3%
Total	259,712,641	100%

Table 29: Total Unmet Need by Community and FEMA Category

Loc	Cat A \$	Cat B \$	Cat C \$	Cat D \$	Cat E \$	Cat F \$	Cat G \$	Total Unmet Need \$
BoC	62,571	704,879	13,089,549	820,497	170,794	0	2,314,357	17,162,646
CiBo	194,204	537,296	116,615	315,632	42,122	197,268	595,090	1,998,227
JT	6,129	10,781	161,503	3,083	1,589	69,077	1,864	254,026
Laf	5,476	18,088	2,471	1,762	2,014	2,498	81,504	113,814
Lou	42,090	45,229	1,874	22,152	0	400.14	352,908	464,652
Lon	68,901	679,368	436,801	1,044,937	8,163	504,361	3,881,290	6,623,820
Ly	25,131	125,979	126,602	0	38,474	36,047	540,282	892,515
Ned	903.98	1,099	25,912	0	563	53,596	0	82,074
Tot	405,404	2,122,720	13,961,328	2,208,064	263,717	863,248	7,767,294	27,591,774

Table 30: Percent of Total PA Unmet Need by Community for All PA Categories

Community	Total PA Unmet Need	Percent of Total
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		Need
Boulder County	17,162,646	62.2%
City of Boulder	1,998,227	7.2%
Jamestown	254,026	0.9%
Lafayette	113,814	0.4%
Louisville	464,652	1.7%
Longmont	6,623,820	24.0%
Lyons	892,515	3.2%
Nederland	82,074	0.3%
Tot	27,591,774	100%

FHWA

The Communities below were awarded Federal Highway Administration (FHWA) Emergency Recovery (ER) Program funds for damages to the federal highway system running through their communities. The ER Program is the federal program responsible for repairs to all road damage on the Federal Aid Highway system which includes major city and county roads, primarily those classified as arterial roadway or above. The ER Program reimburses a percentage of all eligible repair expenses to similar to FEMA PA.

Table 31: Total FHWA Unmet Need by Community

Community	Project	Total Costs	Resource	Other Resource	Unmet Need
City Boulder	FHWA Projects	\$596,345.59	\$535,654.47	\$0	\$60,691.12
Longmont	Sunset St. Bridge	\$3,741,757	\$3,074,602	\$333,578**	\$333,578
Louisville	FHWA County Road Bridge	\$3,654,602	\$2,923,682	\$730,920	\$250,000*
Boulder County	Repair to Federal Roads	\$75,000,000	\$67,500,000	\$0.00	\$7,500,000
	Total	\$82,992,705	\$74,033,938	\$1,064,498	\$8,144,269

*Costs not covered by FHWA

**County share of project

HAZARD MITIGATION GRANT PROGRAM

The Hazard Mitigation Grant Program (HMGP) provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

The amount of funding available for HMGP is limited. The program may provide a state with up to 15 percent of the total disaster grants awarded by FEMA. FEMA can fund up to 75 percent of the eligible

costs of each project. The state must provide 25 percent match, which can be a combination of cash and in-kind sources.

Communities must apply for HMGP funds and must be determined eligible based on the following criteria:

- Does the project conform to the State’s Hazard Mitigation Plan?
- Does the project provide a beneficial impact on the disaster area?
- Does the application meet environmental requirements?
- Does the project solve a problem independently?
- Is the project cost effective?

The HMGP is administered by the state, which prioritizes and selects project applications developed and submitted by the local communities. The state forwards applications to FEMA for eligibility review. Funding the grant program is limited and states and local communities must make difficult decisions as to the most effective use of available grant funds. HMGP projects are considered an unmet need until FEMA and the state approve and obligate the funds. The current HMGP projects have an unmet need of **\$66,532,705.**

Table 32: FEMA HMGP Damage and Cost of Repairs

Community	Project	Total Cost	Funding Resources	Community Unmet Need
City of Boulder	Wonderland Creek Flood Mitigation	\$25,000,000	\$5,000,000	\$20,000,000
City of Boulder	Four Mile Canyon Creek Flood Mitigation	\$30,000,000	\$6,100,000	\$23,900,000
Boulder County	Code Enforcement	\$279,403	\$279,403	\$0.00
Boulder County	Back-Up Generators County Buildings	\$1,180,000	\$1,180,000	\$0.00
Jamestown	HMGP Program	\$5,421,192	\$5,192,208	\$228,984
Longmont	Storm Water Drainage and Channel Widening	\$18,500,000	\$0.00	\$18,500,000
Longmont	Wastewater Treatment Plant Protection	\$3,883,440	\$0.00	\$3,883,440
Lyons	HMGP Code Enforcement	\$81,124	\$60,843	\$20,281
	Total	\$84,345,159	\$17,812,454	\$66,532,705

Note: if HMGP Buyouts are approved for Boulder County, Lyons, and Jamestown, there would be a local match unmet need, estimated at \$2,000,000 for Boulder County and \$1,236,620 for Lyons.

RESILIENCY INFRASTRUCTURE NEEDS

The State of Colorado in its HUD approved *Colorado Action Plan for Disaster Recovery*, Version 1.3, July 21, 2014, provided the following list of resiliency and mitigation actions to be considered in identifying unmet needs.

Resiliency and mitigation actions include:

- Acquisition of flood damaged or at-risk structures
- Flood reduction projects such as detention ponds, flood control structures, channel improvements
- Hardening or replacement of infrastructure
- Channel stabilization, erosion protection and river restoration projects
- Dry or wet flood-proofing of structures, including historic structures
- Development of new geospatial products that identify and delineate risk (hazard area maps, topographic and elevation data such as LiDAR)
- Public education campaigns
- Installation of stream gauges and flood warning systems
- Support for community planning efforts that incorporate risk-reduction and resiliency principles

Boulder County and its communities have identified unmet needs to address additional resiliency for its infrastructure in addition to those representing the City cost-share for the FEMA funded PA programs. Please see the tables below.

Table 33: Boulder County Resiliency Projects

Community	Project Description	Total Costs	Resources	Unmet Need
Boulder County	Lefthand Canyon Drive Emergency Road-emergency repair	\$380,000	\$0.00	\$380,000
Boulder County	Repairs to Lefthand Creek to re-open Bike/Ped underpasses at Airport Rd and 95 th Street	\$4,800,000	\$0.00	\$4,800,000
Boulder County	Salina Junction (reconstruction of drains structure to increase hydraulic capacity at Gold Run Creek and Four Mile Creek	\$2,000,000	\$0.00	\$2,000,000
Boulder County	East County Line Rd. bridge at Boulder Creek (replace substandard capacity	\$5,000,000	\$0.00	\$5,000,000

	bridge)			
Boulder County	61 st Street bridge (replace substandard capacity bridge)	\$4,000,000	\$0.00	\$4,000,000
Boulder County	Four Mile Canyon Resiliency Elements (connecting substandard road sections between flood damaged/reconstructed road damage)	\$10,000,000	\$0.00	\$10,000,000
Boulder County	Left Hand Canyon Resiliency elements (construction of structures, realignment of creeks, road elevation)	\$52,000,000	\$0.00	\$52,000,000
Boulder County	Baseline Road bridge at Dry Creek and Arapahoe Rd. bridge, a CDOT structure (replace substandard bridge)	\$15,000,000	\$0.00	\$15,000,000
Boulder County	Valmont Road washouts (damage to embankment and guardrail)	\$1,200,000	\$0.00	\$1,200,000
Boulder County	NRCS-site work	\$525,000	\$0.00	\$525,000
Boulder County	Sediment Removal/FEMA Ineligible costs	\$1,000,000	\$0.00	\$1,000,000
Boulder County	Lake 2 & 3; repair of reservoirs to restore water storage capacity including removal of significant amounts of sediment	\$13,000,000	\$0.00	\$13,000,000
Boulder County	Other Various Ditches; county share of repairs to ditches that have multiple owners not eligible for FEMA assistance.	\$328,000	\$0.00	\$328,000
Boulder County	Sunset Dam Reconstruction at Pella Crossing; repairs to dam and construction of spillway; needed repairs have not been found to be eligible for FEMA assistance	\$1,000,000.00	\$0.00	\$1,000,000.00

Boulder County	S. St Vrain Channel Restoration (Hall II & Hall Meadows) including design, streambank stabilization, restoration, low flow channel development, riparian vegetation, flood mitigation and natural hazard reduction for 3+ miles of stream corridor.	\$3,100,000.00	\$0.00	\$3,100,000.00
Boulder County	St Vrain Creek Channel Restoration, Hwy 36 to Hygiene Road, including breaches 1-9 on Boulder County open space property and private property, including design, establishing a stable stream slope, grade eroded streambanks, restore floodplain corridor habitat.	\$4,000,000.00	\$0.00	\$4,000,000.00
Boulder County	St. Vrain Creek Channel Restoration-Keyes/Golden Farm- Boulder County open space; streambank stabilization and restoration of floodplain functionality.	\$305,000.00	\$0.00	\$305,000.00
Boulder County	Left Hand Creek Channel Restoration- Brewbaker, Boulder County open space; streambank stabilization; restoration of floodplain functionality.	\$922,559.00	\$0.00	\$922,559.00
Boulder County	Left Hand Creek Channel Restoration- Bishop, Boulder County open space; revegetation.	\$20,243.00	\$0.00	\$20,243.00
Boulder County	Left Hand Creek Channel Restoration -Bielins Hock, Boulder County open space; streambank stabilization.	\$504,040.00	\$0.00	\$504,040.00
Boulder	Heil Valley Ranch (Geer Canyon & Plumely Canyon) –Boulder County open	\$1,870,303.00	\$0.00	\$1,870,303.00

County	space; channel restoration and stabilization.			
Boulder County	Boulder Creek Channel Restoration-Alexander Dawson Boulder County open space; restoration of foodplain functionality.	\$46,250.00	\$0.00	\$46,250.00
Boulder County	Anne U White –Boulder County open space; streambank stabilization not included in trail repair project that is FEMA eligible.	\$452,340.00	\$0.00	\$452,340.00
Boulder County	Kenosha- Boulder County open space; restoration of scour area (fill and seeding) adjacent to Boulder Creek.	\$50,241	\$0.00	\$50,241
Boulder County	Ramey Historic Homestead – Boulder County open space; engineering design for and repairs to historic barn, granary, and home; restoration of grounds and pasture; significant ground-restoration needed. Building repairs to be completed by county staff.	\$512,747.00	\$0.00	\$512,747.00
Boulder County	Keyes uplands; restoration of about 27 acres of uplands adjacent to the St. Vrain just east of County Line Road including disposal and/or reclamation of approximately 100,000CY of sediment	\$6,069,667	\$0.00	\$6,069,667
Boulder County	Alexander Dawson uplands; restoration of about 30 acres of uplands adjacent to Boulder Creek including disposal and/or reclamation of approximately 120,000CY of sediment	\$6,636,668	\$0.00	\$6,636,668
Boulder County	Kenosha uplands; restoration of about 11	\$1,273,750	\$0.00	\$1,273,750

	acres of uplands adjacent to Boulder Creek including disposal and/or reclamation of approximately 40,000CY of sediment			
Boulder County	Parrish property restoration - Little Thompson creek restoration consistent with Master Plan; bank stabilization and seeding for erosion control along 2,000 ft. of stream in cooperation with adjacent land owner (primarily fill and grading) (see Sheet 42&43, STA 1351+00 to 1370+00)	\$578,000	\$0.00	\$578,000
	Total	\$136,574,808	\$0.00	\$136,574,808

Table 34: City of Boulder Resiliency Projects

Community	Project	Estimated Cost	Resources	Unmet Need
City of Boulder	404 HMGP Denied NOIs: Streambank Restoration	\$600,000	\$0.00	\$600,000
City of Boulder	Wastewater Interceptor Lining	\$4,500,000	\$0.00	\$4,500,000
City of Boulder	Baseline Sanitary Trunk Sewer Hydraulic Improvements	\$1,000,000	\$0.00	\$1,000,000
City of Boulder	55 th & Arapahoe Sanitary Sewer Hydraulic Improvements	\$3,000,000	\$0.00	\$3,000,000
City of Boulder	Disconnection of Storm sewers from Irrigation Ditches	\$5,000,000	\$0.00	\$5,000,000
City of Boulder	Pearl Street Storm	\$2,000,000	\$0.00	\$2,000,000

	Sewer from 16 th to 21 st			
City of Boulder	Carter Lake Pipeline	\$43,800,000	\$0.00	\$43,800,000
City of Boulder	Baseline Sanitary Trunk Sewer Hydraulic Improvements	\$1,000,000	\$0.00	\$1,000,000
City of Boulder	404 HMGP Denied NOIs – Water treatment plant generators	\$2,210,000	\$0.00	\$2,210,000
City of Boulder	South Creek Boulder Flood Mitigation	\$47,000,000	\$0.00	\$47,000,000
City of Boulder	Inflow and Infiltration Elimination	\$10,000,000	\$2,000,000	\$8,000,000
City of Boulder	Annexation for Water and Sewer Service	\$5,000,000	\$1,000,000	\$4,000,000
	Total	\$125,110,000	\$3,000,000	\$122,110,000

Table 35: Jamestown Resiliency Projects

Community	Project	Total Cost	Other Resources	Unmet Need
Jamestown	Infrastructure Safety	\$500,000	\$0.00	\$500,000
Jamestown	Howlett's Gulch Culvert Right-Sizing	\$400,000	\$0.00	\$400,000
Jamestown	Lower Main St. Bridge	\$1,500,000	\$0.00	\$1,500,000
	Total	\$2,400,000	\$0.00	\$2,400,000

Table 36: Lafayette Resiliency Projects

Community	Project	Total Cost	Other Resources	Unmet Need
Lafayette	Public Road Restroom	\$38,797.32	\$0.00	\$38,797.32
Lafayette	Storm Drain at Indian Peaks Golf Course	TBD	TBD	TBD
Lafayette	Channel Grading	\$80,000	\$0.00	\$80,000
Lafayette/Boulder County	Coal Creek Stream Restoration (Adler-Fingru & Warembourg-Lafayette)	\$278,174.00	\$0.00	\$278,174.00
	Total	\$396,971	\$0.00	\$396,971

Table 37: Longmont Resiliency Projects

Community	Project	Total Costs	Resources	Unmet Need
Longmont	Wastewater Treatment Plant Protection	\$3,883,440	\$0.00	\$3,883,440
Longmont	Repairs to sections of damaged roadways	\$164,726	\$0.00	\$164,726
Longmont	Permanent repairs to Hayden Court	\$115,000	\$0.00	\$115,000
Longmont	Roadway repairs on Boston Avenue	\$20,356	\$0.00	\$20,356
Longmont	Longmont Dam Road/Spillway Road Permanent Repair	\$3,068,109	\$0.00	\$3,068,109
Longmont	Longmont Dam	\$127,450	\$0.00	\$127,450
Longmont	Repair of City Parks and Button Rock facilities	\$1,000,000	\$0.00	\$1,000,000
Longmont	Watershed Protection	\$7,000,000	\$0.00	\$7,000,000
Longmont	City of Longmont Airport Road Flood Protection Project (Western Boundary Flood Protection Project)	\$2,000,000	\$0.00	\$2,000,000

Longmont	City owned Irrigation Ditch flood repair and flood protection	\$500,000	\$0.00	\$500,000
Longmont	Ralph Price Reservoir – replacement water supply	\$540,000	\$0.00	\$540,000
Longmont	St. Vrain Creek Channel Repair west of City – Hepp Property	\$1,500,000	\$0.00	\$1,500,000
Longmont	St. Vrain Creek Overflow Channel west of City - Golden Property	\$500,000	\$0.00	\$500,000
Longmont	Highland Ditch bank hardening to avoid future flooding at Nelson Flanders Water Treatment Plant	\$700,000	\$0.00	\$700,000
Longmont	North Pipeline Reconstruction to minimize future flood damage	\$3,500,000	\$0.00	\$3,500,000
Longmont	Pressurization of the South St. Vrain Pipeline	\$2,403,780	\$0.00	\$2,403,780
Longmont	Raw Water INC Improvements	\$1,000,000	\$0.00	\$1,000,000
Longmont	PB-192, Flood Response Capability Enhancements	\$500,000	\$0.00	\$500,000
Longmont	Extending Lyons Wastewater Treatment Plant Outfall Line	\$465,000	\$0.00	\$465,000
Longmont	Design of 100-year floodplain channel	\$338,321	\$0.00	\$338,321
Longmont	St. Vrain Creek 100-Year Floodplain Channelization (PWNR Project)	\$51,500,000	\$0.00	\$51,500,000
Longmont	Relocation of Fire Training Center	\$7,200,000	\$0.00	\$7,200,000
Longmont	Additional emergency shelter generators	\$200,000	\$0.00	\$200,000
Longmont	St. Vrain Greenway Trail-Areas 5 & 6	\$587,254.23	\$0.00	\$587,254.23
Longmont	Heron Lake Relief Channel Project	\$817,806	\$100,000**	\$717,806
	Total	\$89,631,242	\$100,000	\$89,513,242

**County portion

Table 38: Louisville Resiliency Projects

Community	Project	Estimated Cost	Other Resources	Unmet Need
Louisville	County Roads and Bridges	\$250,000	\$0.00	\$250,000
Louisville	Golf Course Repairs not covered by other sources	\$2,888,440	\$0.00	\$2,888,440
Louisville	Water Intake Building Enhancement	\$1,000,000	\$0.00	\$1,000,000
	Total	\$4,138,440	\$0.00	\$4,138,440

Table 39: Lyons Resiliency Projects

Community	Project	Total Cost	Other Resources	Unmet Need
Lyons	Sediment Removal on McConnell Island	\$250,000.00	\$0.00	\$250,000.00
Lyons	2 nd Avenue Bridge up-sizing to meet codes and standards	\$3,000,000	\$0.00	\$3,000,000
Lyons	McConnell Bridge up-sizing to meet codes and standards	\$2,200,000	\$0.00	\$2,200,000
Lyons	Sidewalks, Curbs, & Gutters in areas w/o storm drainage	\$500,000	\$0.00	\$500,000
Lyons	Rebuilding & Repaving Roads that resulted from flood recovery efforts and equipment	\$250,000	\$0.00	\$250,000
Lyons	Install Redundant Water Storage tank within town limits	\$1,000,000	\$0.00	\$1,000,000
Lyons	Implement Storm Water Drainage Plan in Steamboat Valley	\$2,500,000	\$0.00	\$2,500,000

Lyons	Increasing capacity for Storm Water Drainage-2 nd Ave.	\$3,000,000	\$0.00	\$3,000,000
Lyons	Increasing capacity for Storm Water Drainage-3 rd Ave.	\$1,500,000	\$0.00	\$1,500,000
Lyons	Increasing capacity for Storm Water Drainage-1 st Ave.	\$1,000,000	\$0.00	\$1,000,000
Lyons	Install municipal water line in Apple Valley to replace wells near river	\$1,800,000	\$0.00	\$1,800,000
Lyons	Replacing backup Water Pump due to extended use during flood	\$250,000	\$0.00	\$250,000
Lyons	CDPHE Match for water quality grant	\$26,500	\$0.00	\$26,500
Lyons	Lyons Ditch Repairs restore irrigation to municipal parks	\$350,000	\$0.00	\$350,000
Lyons	Highland Ditch alterations of safety features for ditch structure	\$1,500,000	\$0.00	\$1,500,000
Lyons	Street Sweeper	\$120,000	\$0.00	\$120,000
Lyons	Extension of water and sewer lines for commercial eastern corridor (CEC) for economic resiliency	\$735,000	\$0.00	\$735,000
Lyons	Underground Electric on 36 for risk reduction and resiliency	\$2,000,000	\$0.00	\$2,000,000
Lyons	Electric Rate Subsidy repayment to customers	\$100,000	\$0.00	\$100,000
Lyons	Installation of electronic read meters for Electric and Water	\$120,000	\$0.00	\$120,000
Lyons	Installation of Scada systems for early warning detection for sewer lift stations	\$150,000	TBD	\$150,000

Lyons	Restoration of scoured McConnel Ponds to add more capacity for flood control	\$2,200,000	\$0.00	\$2,200,000
Lyons	Relocation of Town Hall / Community Center to move out from flood prone area	\$6,000,000	\$0.00	\$6,000,000
Lyons	Tree Replacement for parks and public spaces in flood plain for erosion control and ecological stability	\$75,000	\$0.00	\$75,000
Lyons	Implementation of master park plan for passive recreation amenities on Buy-Out properties including trails, camping and play fields.	\$4,850,000	\$0.00	\$4,850,000
Lyons	Bohn Park Irrigation pump house and filtration system	\$195,000	\$0.00	\$195,000
Lyons	Meadow Park Irrigation pump house and filtration system	\$195,000	\$0.00	\$195,000
Lyons	Purchase and demolition of Longmont Decommissioned Water Plants Urban renewal area outside of flood plain by the	\$1,725,000	\$0.00	\$1,725,000
Lyons	South St. Vrain Stream bank restoration for erosion control	\$1,600,000	\$0.00	\$1,600,000
Lyons	Meadow Park to 3 rd and Park Street for bank Restoration for erosion control	\$1,000,000	\$0.00	\$1,000,000
Lyons	Stream bank restoration from Highland Ditch to town limits	\$500,000	\$0.00	\$500,000
Lyons	Emergency generators for shelters and public facilities	\$200,000	\$0.00	\$200,000

Lyons	Installation of additional emergency warning systems	\$50,000	\$0.00	\$50,000
Lyons	DRCOG Match - Broadway Avenue for redevelopment of commercial area	\$1,638,366	\$0.00	\$1,308,366
Lyons	DRCOG Match - Main Street for risk reduction and economic development	\$1,536,717	\$0.00	\$1,136,717
	Total	\$43,866,583	\$0.00	\$43,136,583

*DRCOG Grant

Table 40: Nederland Resiliency Projects

Community	Project	Estimated Cost	Other Resources	Unmet Need
Nederland	Water Control Facilities: Community Center Storm Water Management (Phases 1-3)	\$857,000	\$0.00	\$857,000
Nederland	Water Control Facilities: Storm System projects near Term (1-3 yrs)	\$2,748,000	\$0.00	\$2,748,000
	Total	\$3,605,000	\$0.00	\$3,605,000

TOTAL RESILIENCY UNMET NEED FOR INFRASTRUCTURE

Table 41: Resiliency Projects Unfunded by Other Resources per Community

Community	Resiliency Unmet Need	Percent by Community
Boulder County	\$136,574,808.00	33.7%
City of Boulder	\$125,110,000.00	30.9%
Jamestown	\$2,400,000.00	0.6%
Lafayette	\$396,971	0.1%
Longmont	\$89,513,242.00	22.1%

Louisville	\$4,138,440.00	1.0%
Lyons	\$43,136,583	10.7%
Nederland	\$3,605,000	0.9%
Total	\$404,875,044	100.0%

Table 42: Total Unmet for PA, FHWA, HMGP and Infrastructure Resiliency per Community

Community	Total PA Unmet Need	FHWA Unmet Need	Total Resiliency Unmet Need	HMGP Unmet Need	Total Unmet Need
Boulder County	\$15,863,522	\$7,500,000	\$136,574,808.00	\$0.00	\$159,938,330
City of Boulder	\$1,998,227	\$60,691	\$125,110,000.00	\$43,900,000	\$171,068,918
Jamestown	\$755,881	\$0.00	\$2,400,000.00	\$228,984	\$3,384,865
Lafayette	\$113,814	\$0.00	\$396,971	\$0.00	\$510,785
Longmont	\$6,623,820	\$333,578	\$89,513,242.00	\$22,383,440	\$118,854,080
Louisville	\$464,652	\$250,000	\$4,138,440.00	\$0.00	\$4,853,092
Lyons	\$892,515	\$0.00	\$43,136,583	\$20,281	\$44,049,379
Nederland	\$82,074	\$0.00	\$3,605,000	\$0.00	\$3,687,074
Total	\$26,794,505	\$8,144,269	\$404,875,044	\$66,532,705	\$506,346,523

Boulder County has tremendous unmet infrastructure, mitigation, and resiliency needs. Even after accounting for **almost \$250** million in resources, the County's unmet need for PA, FHWA, HMGP, and Resiliency remains **at over \$506 million** dollars. Detail regarding the unmet need for Special Districts is below.

Boulder County Special Districts

An Unmet Needs Survey conducted among the Special Districts within Boulder County in October, 2014. Subsequent to the survey responses received in October and November, 2014, the Boulder County Collaborative has received updated information concerning any unmet needs within these districts.

Special Districts in Colorado are local governments, i.e., political subdivisions of the state, which make up a third level of government in the United States. (The federal and state governments are the other two levels.) Local governments include counties, municipalities (cities and towns), school districts, and other types of government entities such as "authorities" and "special districts." Colorado law limits the types of services that county governments can provide to residents. Districts are created to fill the gaps that may exist in the services counties provide and the services the residents may desire. The majority of districts draw their boundaries in unincorporated county land, but residents of a municipality may be included in one or more districts.

The following Boulder County Special Districts were contacted and requested to complete the Survey:

- Allenspark Fire District
- Boulder Mountain Fire District
- Boulder Valley School District
- Fairways Metropolitan District
- Four Mile Canyon Fire District
- Gold Hill Fire District
- Left Hand Water District
- Left Hand Fire District
- Lyons Fire Protection District
- Niwot Sanitation District
- Pine Brook Water District
- Sunshine Fire District
- St. Vrain Valley School District

The table below has the damages per Special District and FEMA PA category, funds to be received from FEMA at the federal level, the State of Colorado, and then the remaining amount to be covered by Special District. Amounts contained in this table were recent as of February, 2015.

Table 43: Unmet Need Based on Special District Survey

Special District	Project	C A T	Total Cost	Federal Share	Colorado Share	Community Unmet Need
Allenspark Fire Protection	Repair or Replace Dry Hydrants	D	\$8,984.92	\$6,738.69	\$1,123.12	\$1,123.11
Allenspark Fire Protection Subtotal						\$1,123.11
Boulder Mountain Fire Protection District	Debris Removal	A	\$3,872.96	\$2,904.72	\$484.12	\$484.12

Boulder Mountain Fire Protection District	Emergency Protective Measures	B	\$64,013.12	\$48,009.84	\$8,001.64	\$8,001.64
Boulder Mountain Fire Protection District	Emergency Access Road Repair	C	\$28,989.90	\$21,742.43	\$3,623.74	\$3,623.73
Boulder Mountain Fire Protection District Subtotal						\$12,109.49
Boulder Valley School District	Debris Alternative Procedures	A	\$112,375.30	\$95,413.34	\$8,480.98	\$8,480.98
Boulder Valley School District	DONATED RESOURCES	B	\$11,467.77	\$8,600.83	\$0.00	\$2,866.94
Boulder Valley School District	Emergency Protective Measures	B	\$38,191.44	\$28,643.58	\$4,773.93	\$4,773.93
Boulder Valley School District	Building Repairs [District-wide Damages]	E	\$38,825.23	\$29,118.92	\$4,853.16	\$4,853.15
Boulder Valley School District	Building Repair and Contents [Crestview E.S.]	E	\$135,467.63	\$101,600.72	\$16,933.46	\$16,933.45
Boulder Valley School District	Public Utilities (Sewer Line Repair)	F	\$192,943.90	\$144,707.93	\$24,117.99	\$24,117.98
Boulder Valley School District	Outdoor sports fields and playground repair	G	\$1,151,316.42	\$863,487.32	\$143,914.55	\$143,914.55
Boulder Valley School District Subtotal						\$205,940.98
Fairways Metropolitan District	Emergency Protective Measures	B	\$12,709.35	\$9,532.01	\$1,588.67	\$1,588.67
Fairways Metropolitan District Subtotal						\$1,588.67
Fourmile Fire Protection District	Emergency Protective Measures	B	\$41,230.71	\$30,923.03	\$5,153.84	\$5,153.84
Fourmile Fire Protection District	Vehicle Replacement/Repair	E	\$4,870.00	\$3,652.50	\$608.75	\$608.75

Fourmile Fire Protection District Subtotal						\$5,762.59
Gold Hill Fire Protection District	Gold Hill Security Patrols, Search and Rescue	B	\$4,882.50	\$3,661.88	\$610.31	\$610.31
Gold Hill Fire Protection District Subtotal						\$610.31
Left Hand Water District	EPM	B	\$103,039.25	\$77,279.44	\$12,879.91	\$12,879.90
Left Hand Water District	EPM	B	\$110,337.09	\$82,752.82	\$13,792.13	\$13,792.14
Left Hand Water District	Generator	B	\$30,894.55	\$23,170.91	\$3,861.82	\$3,861.82
Left Hand Water District	EPM	B	\$64,488.86	\$48,366.65	\$8,061.11	\$8,061.10
Left Hand Water District	Public Utilities	F	\$500,464.04	\$375,348.03	\$62,558.01	\$62,558.00
Left Hand Water District	Public Utilities	F	\$56,517.10	\$42,387.83	\$7,064.64	\$7,064.63
Left Hand Water District	Public Utilities - Site Pipe Repairs	F	\$20,718.32	\$15,538.74	\$2,589.79	\$2,589.79
Left Hand Water District	Public Utilities	F	\$223,053.48	\$167,290.11	\$27,881.68	\$27,881.69
Left Hand Water District	Public Utilities- Underground Piping	F	\$991,689.40	\$743,767.05	\$123,961.18	\$123,961.17
Left Hand Water District Subtotal						\$262,650.24
Lefthand Fire District	Emergency Protective Measures	B	\$49,674.24	\$37,255.68	\$6,209.28	\$6,209.28
Lefthand Fire District	Water Control Facilities - Dry Hydrants	D	\$8,376.75	\$6,282.56	\$1,047.10	\$1,047.09
Lefthand Fire District	Building Repair (Fire Stations)	E	\$3,876.78	\$2,907.59	\$484.60	\$484.59
Lefthand Fire District Subtotal						\$7,740.96

Lyons Fire Protection District	Lodging for Rescue Operations	B	\$10,016.72	\$7,512.54	\$1,252.09	\$1,252.09
Lyons Fire Protection District	Emergency Rescue Services	B	\$78,690.75	\$59,018.06	\$9,836.34	\$9,836.35
Lyons Fire Protection District	Emergency Protective Measures	B	\$19,769.70	\$14,827.27	\$2,471.21	\$2,471.22
Lyons Fire Protection District	Emergency Protective Measures (Contract)	B	\$60,377.13	\$45,282.85	\$7,547.14	\$7,547.14
Lyons Fire Protection District	Donated Resources	B	\$113,164.38	\$84,873.29	\$0.00	\$28,291.09
Lyons Fire Protection District	Vehicle Replacement	E	\$591.88	\$443.91	\$73.99	\$73.98
Lyons Fire Protection District	Building Contents Replacement - Replace/Repair Radios	E	\$1,175.00	\$881.25	\$146.88	\$146.87
Lyons Fire Protection District	Equipment Repair	E	\$600.00	\$450.00	\$75.00	\$75.00
Lyons Fire Protection District	Building Replacement (Fire Station #2 and Contents)	E	\$42,950.38	\$32,212.79	\$5,368.80	\$5,368.79
Lyons Fire Protection District Subtotal						\$55,062.23
Niwot Sanitation District	Emergency Protective Measures	B	\$31,477.74	\$23,608.31	\$3,934.72	\$3,934.71
Niwot Sanitation District	Gravel Wash and Reshape Roads	C	\$1,500.00	\$1,125.00	\$187.50	\$187.50
Niwot Sanitation District	Lagoon Repair/Replacement	F	\$173,451.00	\$130,088.25	\$21,681.38	\$21,681.37
Niwot Sanitation District Subtotal						\$25,803.58
Pine Brook Water District	Emergency Protective Measures for Water Main	B	\$40,937.15	\$30,702.86	\$5,117.14	\$5,117.15

Pine Brook Water District	Emergency Protective Measures Generators	B	\$4,725.24	\$3,543.93	\$590.66	\$590.65
Pine Brook Water District	Access Roads and Culvert Repairs	C	\$4,100.00	\$3,075.00	\$512.50	\$512.50
Pine Brook Water District	PIBWD10	D	\$465,088.16	\$348,816.12	\$58,136.02	\$58,136.02
Pine Brook Water District	Diversion Pond Restoration	F	\$241,739.55	\$181,304.67	\$30,217.44	\$30,217.44
Pine Brook Water District	Water System Capacity Restoration	F	\$463,526.25	\$347,644.69	\$57,940.78	\$57,940.78
Pine Brook Water District	Supply Pipeline Repairs	F	\$48,255.00	\$36,191.25	\$6,031.88	\$6,031.87
Pine Brook Water District	Stream Gauge Repair	F	\$7,403.00	\$5,552.25	\$925.38	\$925.37
Pine Brook Water District	Treatment and Distribution System Repairs	F	\$52,857.47	\$39,643.10	\$6,607.18	\$6,607.19
Pine Brook Water District	PINE BROOK WATER DISTRICT - PUBLIC UTILITIES	F	\$599,975.00	\$449,981.25	\$74,996.88	\$74,996.87
Pine Brook Waster District Subtotal						\$241,075.84
St Vrain Valley School	Building Repair	E	\$27,677.49	\$20,758.12	\$3,459.69	\$3,459.68
St Vrain Valley School	Facility Repair	G	\$50,353.53	\$37,765.15	\$6,294.19	\$6,294.19
St Vrain Valley School	Building Replacement/Repair Main St/ESC	E	\$587.61	\$440.71	\$73.45	\$73.45
St Vrain Valley School	Emergency Protective Measures	B	\$2,867.91	\$2,150.93	\$358.49	\$358.49
St Vrain Valley School	Facility Repair E. Bus Facility	E	\$341.49	\$256.12	\$42.69	\$42.68
St Vrain Valley School	Accelerated Debris Removal	A	\$431.96	\$367.17	\$32.40	\$32.39

St Vrain Valley School	Building/Replacement Repair Erie High School	E	\$502,434.83	\$376,826.12	\$62,804.36	\$62,804.35
St Vrain Valley School Subtotal						\$73,065.23
Sunshine Fire Protection District	Emergency Protective Measures	B	\$23,647.33	\$17,735.50	\$2,955.92	\$2,955.91
Sunshine Fire Protection District	Building Repair	E	\$1,694.13	\$1,270.60	\$211.77	\$211.76
Sunshine Fire Protection District Subtotal						\$3,167.67
Grand Total			\$7,085,679	\$5,325,434	\$864,543	\$895,701

Based on the most current FEMA PA report, the Special Districts have a total of \$895,701 in unmet FEMA PA unmet need.

Boulder County, Colorado Master Watershed Plans: St. Vrain Creek, Left Hand Creek, Four Mile Creek, and Little Thompson River

Beginning on September 9th, 2013, significant flash flooding occurred in north-central Colorado on the eastern side of the Continental Divide. Larimer, Weld, and Boulder counties were among the most devastated of the 18 Colorado counties included in the September 24, 2013 Presidential Disaster Declaration.

Boulder County created a Comprehensive Creek Plan Initiative (CCP) to address watershed recovery. The CCP was initiated to ensure county-wide view of creek recovery and restoration. The CCP began with community meetings to identify needs resulting from the flood. First steps started with high-hazard debris removal and mitigation projects. The CCP then prepared for and transitioned to watershed-level master planning process. Collaboration was formed among the Coalition Partners¹², community members, landowners, and stakeholder interests.

¹² Partnerships: Boulder County, City of Longmont, City of Boulder, Town of Lyons, Town of Jamestown, St. Vrain and Left Hand Water Conservancy District, Longmont and Boulder Valley Conservation Districts, Left Hand Water District, Arapaho and Roosevelt National Forests and Pawnee National Grassland, Keep It Clean Partnership, Natural Resources Conservation Service, Colorado Water Conservation Board, Colorado Department of Transportation, Colorado Division of Homeland Security and Emergency Management, Colorado Division of Reclamation Mining & Safety, FEMA, and the Environmental Protection Agency

To accomplish the transition to comprehensive creek planning, the CCP undertook the following communications and outreach beginning in June 2014 with kick-off meetings and continuing through plan finalization estimated for December 2014.

COMMUNICATIONS AND OUTREACH¹³

- 1 project video produced
- 15 community meetings with over 550 total participants
- 3,593 postcards sent announcing the master plan process and kick-off community meetings
- 10 external presentations at meetings, conferences, and workshops
- 5 internal presentations for various county departments
- 8 press releases sent
- 15 external emails with updates and announcements on master plans
- 6 internal emails with updates

The CCP four phases of recovery:

- Emergency and Response
- Immediate Threat Assessment and Mitigation
- [Long-Term Vision: Watershed Master Plans](#)
- [Future Creek Projects: Funding and Implementation](#)

Long-Term Vision: Watershed Master Plans

The core objectives of Master Plans are to¹⁴:

- Identify priority projects and alternatives that will restore the creek corridor;
- Inform the public and mitigate future risk;
- Inform property owners, stakeholders, and local decision makers about the current condition of the watershed's major drainage ways;
- Identify future flood risks and propose projects that both reduce flood risk and increase long-term watershed resilience; and
- Articulate a clear vision of the future of the watershed

This document provides an overview of four watershed master plans: St. Vrain Creek, Left Hand Creek, Four Mile Creek, and Little Thompson River. The Planning Areas of each Master Plan are divided into a number of reaches along the length of the watersheds to facilitate planning and discussion. These plans contain numerous resiliency measures and alternatives. River restoration projects which might be considered in terms of providing improved resiliency include the relocation of structures from the floodplain, single span bridge replacements of existing culverts, expanding the riparian corridor with native vegetation, revised floodplain regulations, and increased set-backs, among a variety of other actions.

¹³ Comprehensive Creek Planning Initiative, Policy Team Update, October 21, 2014

¹⁴ Fourmile Creek Watershed Master Plan, Page 7.

FOUR MILE CREEK¹⁵

The Four Mile Creek Watershed is located on the eastern slope of the Rocky Mountains and covers 24 square miles and approximately 13 miles of creek. Along the Four Mile Creek corridor the flood destroyed large sections of local roads, residential properties, and private residential accesses. A high percentage of local residents were heavily affected by the flood and some were stranded for extended periods of time. Together, the high peak flows, the long duration of the event, and the sediment and debris inputs from landslides and debris flows resulted in significant infrastructure damage, both public and private. In addition to damaged infrastructure, the flood impacts on the creek corridor included migrations of the stream and significant in-stream and off-channel deposition and erosion.

The results of the flood risk assessment in reach 1 show that some of the residences and infrastructure are at an increased risk in the post-flood environment because of significant deposition in the channel. Project recommendations include incorporating and stabilizing a low flow channel section throughout the reach and site-specific bank protection to protect residential structures and transportation infrastructure in areas where the banks are currently unstable.

The rough cost estimate for the items identified in the Draft Four Mile Creek Watershed Master Plan is \$29 Million. This does not include costs for work being performed by others (road projects, EPA, CWCB Stream restoration grant).

LITTLE THOMPSON RIVER¹⁶

Little Thompson River experienced a catastrophic flooding during the storm resulting in infrastructure damage and dramatically altered the river and the riparian corridor. The river system experienced significant degradation, aggradation, lateral migration, and eroding banks. The result has been widespread damage, and in some cases, total loss of homes and other buildings structures, infrastructure, and the river ecosystem. The Little Thompson Master Plan seeks to rebuild infrastructure, restore the river and riparian corridor, and incorporate stabilization and resiliency measures to mitigate and reduce the impacts from future flooding. For example, the fire station in Blue Mountain was originally located along the river banks and destroyed during the 2013 Flood. As a mitigation and resiliency measure it is being reconstructed at a site several miles from the river

Many of the bridges and culverts crossing the Little Thompson were damaged during the 2013 Flood due to scour at the abutments and footings, debris plugging and overtopping flows, and the lateral migration of erosive flows around bridges resulting in flanking of the abutments. One such bridge is the Stagecoach Road Bridge which consists of three large concrete culverts that are likely undersized and easily trap debris. Thus, one of the recommendations for this reach is to reassess the pre-flood capacity of the bridge crossing, the channel, and the elevations of the approach roads, for flood and debris conveyance and the possible replacement and/or reconstruction of all these elements to reduce flood-related impacts and provide safe and more reliable passage over the river. The total cost estimate for repair and restoration is \$32.7 million.

¹⁵ Fourmile Creek Watershed Master Plan: <http://www.fourmilemasterplan.com/>

¹⁶ Little Thompson Watershed Master Plan: <http://ltwrc.org/>

Table 43: Little Thompson River Restoration Master Plan opinion of probable cost¹⁷

Item Description	Cost Estimate Range - low
Mob/Demob (Mobilization and Demobilization)	\$ 962,200
Dewatering	\$ 1,808,100
Create/refine Low-flow Channel	\$ 636,100
Excavate, Grade Low-flow Channel (capacity)	\$ 2,745,600
Grade Control	\$ -
Grading	\$ 684,000
Floodplain Stabilization	\$ 454,300
Lowering and Grading	\$ 794,700
Point Bar Creation	\$ 118,000
Bank Stabilization, Level 1	\$ 1,376,100
Bank Stabilization, Level 2	\$ 1,268,200
Bank Stabilization, Level 3	\$ 855,200
Land Reclamation Fill	\$ 703,800
Upper Bank Stabilization, Level 1	\$ 67,600
Upper Bank Stabilization, Level 2	\$ 24,800
Upper Bank Stabilization, Level 3	\$ 14,800
Seeding	\$ 1,699,900
Temporary irrigation and weed management	\$ 1,002,000
Site-specific	\$ 4,058,400
SUBTOTAL	\$ 19,273,800
Contingency, 15% of subtotal	\$ 2,891,500
Permitting , 2.5% of subtotal	\$ 481,800
Design, plans, specification, contract administration, 15%	\$ 2,891,500
Supervision & Administration, 10%	\$ 1,927,600
SUBTOTAL	\$ 27,463,000
High demand inflation cost, 12%	\$ 3,296,000
Resiliency planning and implementation	\$ 6,463,000
TOTAL	\$ 37,200,000

¹⁷ Little Thompson Watershed Master Plan, Table 5.1, Page 43

ST. VRAIN CREEK¹⁸

The St. Vrain Watershed Planning Area covers 546 square miles and about 54 miles of creek. During the storm event the flood surge moved down through the eastern canyons and exited through the center of the Town of Lyons where the North St. Vrain and South St. Vrain tributaries converge. At its peak, the estimated volume of the St. Vrain was 10 times its normal amount, reaching 100-year flood levels and well surpassing those (500 – 1,000 years) in certain areas.

The floodwater washed out roads and bridges, which isolated property owners from evacuation routes, in some cases for several days. In mountain areas, runoff caused significant changes to the creek corridor as well as upland tributary creek drainages. Debris flows from hillsides caused heavy erosion and deposition of materials along tributaries and in the stream corridor. Large debris – including rocks, trees, trash, and cobble – was carried down from the mountains and was deposited throughout the Planning Area. Restoration and mitigation plans along seven reaches were created to address extensive damages in the Planning Area.

Table 46: St. Vrain Creek Watershed Master Plan Estimated Probable Costs¹⁹

Reach		Estimated Probable Costs
1	Sandstone Reach	\$9,504,000
2	Longmont Flood Control Channel	\$54,726,583
3	Breach Repairs/Stream Restoration	\$15,780,188
4a	Apple Valley Restoration	\$4,864,717
4b	Hall Meadows/S. St. Vrain Restoration	\$6,358,250
4c	Lyons Proper	\$7,854,362
5	Longmont Dam Road Restoration	\$7,707,440
6	HWY 7 Corridor Stream Restoration	\$15,434,981
7	Riverside/Raymond Restoration	\$1,200,714
	Total Cost	\$123,431,235

LEFT HAND CREEK²⁰

The Left Hand Creek drainage basin is located on the eastern slope of the northern Front Range of the Rocky Mountains. The natural watershed of Left Hand Creek is approximately 72-square-miles. The Left Hand Creek Watershed master plan broke down the area into 26 reaches for assessment and planning purposes.

Portions of Left Hand Creek experienced flooding which resulted in significant damage that destroyed large sections of local roads, and public, residential, and commercial properties. The high peak flow combined with the extended duration of the event and sediment/debris inputs from landslides/debris

¹⁸ St. Vrain Watershed Master Plan: <https://projects.mbakercorp.com/stvraincreekmp/Pages/default.aspx>

¹⁹ St. Vrain Master Plan, Draft 6/11/2014, Page 8-2

²⁰ Left Hand Creek Master Plan:
<http://www.bouldercounty.org/flood/property/pages/lefthandcreekmasterplan.aspx>

flows resulted in dramatic changes in the creek corridor and significant damage.²¹ The total estimated cost for repair and restoration is \$35.3 million.

Table 44: Left Hand Creek Watershed Master Plan Estimated Probable Costs²²

Reach	Project	Cost Estimate Range - low	Cost Estimate Range - high
16	Lower James Canyon Neighborhood	\$1,000,000	\$3,000,000
4	Brigadoon Glen	\$1,000,000	\$3,000,000
5	Brewbaker-Sorensen	\$100,000	\$500,000
19-22	Left Hand Road Reconstruction	\$100,000	\$500,000
9	Left Hand Canyon Mountain Park	\$100,000	\$500,000
2	West LoCo Riparian Park	\$500,000	\$1,000,000
2	City or Longmont Flood Control Phase 2	\$1,000,000	\$3,000,000
1	Reach 1 Passive Restoration	\$20,000	\$100,000
3	BoCo Open Space Passive Restoration	\$20,000	\$100,000
3	BoCo Open Space Bielins-Hock Property	\$100,000	\$500,000
3	87th St Crossing Maintenance	\$20,000	\$100,000
3	81st St. Crossing	\$100,000	\$500,000
3	Left Hand Water District	\$20,000	\$100,000
6	3348 Plateau to 8249 39th	\$100,000	\$500,000
5	8241-8249 39th St	\$100,000	\$500,000
6	HWY 36 to 3348 Plateau	\$100,000	\$500,000
6	HWY 36 Crossing	\$1,000,000	\$3,000,000
6	Streamcrest	\$500,000	\$1,000,000
7	845 Left Hand Canyon Drive	\$20,000	\$100,000
7,8	Allens Lake Diversion	\$1,000,000	\$3,000,000
8	1540 Left Hand Road Drainage	\$20,000	\$100,000
18,19	Revegetation of EWP Work	\$20,000	\$100,000
16	Lower James Canyon - The Farmers	\$100,000	\$500,000
15	10487 Left Hand Canyon	\$20,000	\$100,000
24	10332 Left Hand	\$20,000	\$100,000
15	Lickskillet Road and Left Hand Canyon Drive intersection improvements	\$100,000	\$500,000
14	Left Hand Canyon Drive Road River Interface	\$20,000	\$100,000
13	8973 Left Hand Canyon	\$20,000	\$100,000

²¹ Left Hand Creek Watershed Master Plan, page 1

²² St. Vrain Master Plan, Draft 6/11/2014, Page 8-2

13	8614 Left Hand Canyon	\$100,000	\$500,000
13	8404-8398 Left Hand Canyon	\$100,000	\$500,000
13	7933 -7817 Left Hand Canyon	\$100,000	\$500,000
13	Glendale Gulch Drainage and River	\$100,000	\$500,000
12	7164 - 7160 Left Hand Canyon	\$20,000	\$100,000
12	6897 - 6738 Left Hand Canyon	\$100,000	\$500,000
12	6232 Left Hand Canyon	\$20,000	\$100,000
12	5974 Left Hand Canyon	\$100,000	\$500,000
11	5901 - 5001 Left Hand Canyon	\$100,000	\$500,000
10	5001 Left Hand Canyon	\$20,000	\$100,000
10	4333 Left Hand Canyon	\$100,000	\$500,000
9	3988 Left Hand	\$100,000	\$500,000
9	Below Left Hand Canyon Mountain Park to Box Culvert/Crossing	\$1,000,000	\$3,000,000
9	Reach 9 Box culvert to Reach break	\$20,000	\$100,000
8	Buckingham Park	\$20,000	\$100,000
8	Buckingham Park to crossing	\$500,000	\$1,000,000
8	2156 Left Hand through 1934 Left Hand	\$20,000	\$100,000
17	1029 James Canyon to Lower end of EWP Work	\$100,000	\$500,000
20	Upper James Creek	\$20,000	\$100,000
21	Little James Creek	\$500,000	\$1,000,000
22	Geer Canyon	\$500,000	\$1,000,000
23	Sixmile cutbank stabilization	\$100,000	\$500,000
	Total Cost	\$10,960,000	\$35,300,000
	Average High/Low Costs	\$28,610,000	

WATERSHED MASTER PLANS UNMET NEEDS: PLANNING

Table 45: Boulder County Comprehensive Creek Planning Project – Budget²³

Description	Estimated Cost for Consultant-Master plan	CWCB Funds	CDBG-DR Grant Round 1 (\$50,000)	Boulder County Cash Match	Partner Cash Match	Unmet Need
St. Vrain Creek Master Plan	425,854	313,000		68,841	44,013	112,854
Left Hand Creek Master Plan	249,748	174,000		45,449	30,299	75,748

²³ See “REV_BCCSP_budget_9_22_14”

Upper Reaches- Boulder Creek Master Plan (Fourmile, TwoMile)	273,664	190,000		60,664		60,664
Lower Reaches-Boulder Creek & South Boulder Creek Needs Assessment (Little Thompson?)	270,000	23,000		224,000	?	224,000
TOTALS	1,265,266	700,000	50,000	398,954	74,312	485,266

The CCP Program estimate includes staffing for the CCP project team and projected program costs through 2015.

Table 46: CCP Program Estimate²⁴

IFAS Description	Estimated Cost 2014	Estimated Cost 2015	Estimated Cost Total	Actual Cost 2013	Actual Cost 2014	Actual Cost Total
Water Control Comp Creek Plan	374,389	142,500	516,889	70,003	477,642	547,645
CCP StVrain Watershed MP	530,854	10,500	541,354		13,424	13,424
CCP Lefthand Watershed MP	319,873	13,781	333,654		4,865	4,865
CCP Boulder Crk Watershed MP	469,664	19,688	489,352		8,234	8,234
CCP Rock Coal Crks Watershed MP	24,500	-	24,500		236	236
Total	1,719,280	186,469	1,905,749	70,003	504,401	574,404

CREEK RECOVERY PROGRAM UNMET NEEDS

Due to the extensive nature of the damages to the Boulder County creeks and watersheds including the costs associated with staffing these activities, an unmet need of \$191,627,250 still remains. The State of Colorado has allocated \$25 million of its Round 2 CDBG-DR funds for the Watershed Resilience Pilot Program. However, these funds are available state-wide on a competitive basis with no guarantee that unmet needs listed below will receive funds from this program.

Table 47: Unmet Need for Watershed Master Plans

²⁴ See "CCP_Program_Estimate_09.30.14(1)"

Activity Type	Estimated Cost	CWCB Grant to Boulder County	Potential Contributions from Other Agencies	Unmet Need
Watersheds Master Plans	1,265,266	700,000	50,000 (CDBG-DR)	\$485,266
CCP Staffing Costs	1,905,749			1,905,749
Four Mile Implementation	29,000,000			29,000,000
Little Thompson Implementation	37,200,000			37,200,000
St. Vrain	123,431,235			123,431,235
Left Hand	28,610,000			28,610,000
Total	192,412,250			191,627,250

Summary

The Boulder County community specific infrastructure needs are significant as the table below summarizes.

Table 48: Total Unmet for PA, FHWA, HMGP, and Resiliency per Community including Special Districts and Creeks/Watershed

Community	Total PA Unmet Need	FHWA Unmet Need	Total Resiliency Unmet Need	HMGP Unmet Need	Total Unmet Need
Boulder County	\$17,162,646	\$7,500,000	\$136,574,808.00	\$0.00	\$161,237,454
City of Boulder	\$1,998,227	\$60,691	\$125,110,000.00	\$43,900,000	\$171,068,918
Jamestown	\$254,026	\$0.00	\$2,400,000.00	\$228,984	\$2,883,010
Lafayette	\$113,814	\$0.00	\$396,971	\$0.00	\$510,785
Longmont	\$6,623,820	\$333,578	\$89,513,242.00	\$22,383,440	\$118,854,080
Louisville	\$464,652	\$250,000	\$4,138,440.00	\$0.00	\$4,853,092
Lyons	\$892,515	\$0.00	\$43,136,583	\$20,281	\$44,049,379
Nederland	\$82,074	\$0.00	\$3,605,000	\$0.00	\$3,687,074

Subtotal	\$27,591,774	\$8,144,269	\$404,875,044	\$66,532,705	\$507,143,792
Special Districts	\$895,701				\$895,701
Creeks/Watershed			\$191,627,250		\$191,627,250
Total	\$28,487,475	\$8,144,269	\$596,502,294	\$66,532,705	\$699,666,743

Section 4 Business and Economy

Introduction

The September flood in 2013 caused wide-spread disruption to the operations of local businesses throughout Boulder County with physical damage to buildings, inventory and equipment loss, and revenue loss both during and after the flood. The effect of the flood was not contained solely to businesses within the flood zone, as road closures, power outages, and flood-related duties prevented employees and customers alike from reaching businesses. Many businesses have found that the majority of these losses will not be reimbursed by their insurance company, leaving them to carry most of the financial weight.

Business Impact Assessment, Damages to Inventory, and Loss of Business

The above information is another indication of the breadth and depth of the 2013 flood's impact among the business community in Boulder County. The three most impacted communities were the City of Boulder, the City of Longmont and the Town of Lyons. Of the 349 business that applied for Economic Injury Disaster Loan (EIDL), 315 (90%) were from these three communities. Out of the 83 small agriculture applicants, 76 (92%) were from these three communities with over half (42) from Lyons alone. The City of Boulder's Non-Profits made up 75% (38) of the applicants in that category.

The Town of Lyons reported in its Lyons Recovery Action Plan that the biggest impacts to its economy were due to a decrease in resident and visitor customer bases, loss of inventory, and forced closures for all businesses due to utility failures. Local businesses were closed a minimum of six weeks, resulting in an estimated \$3.5 million in lost commercial sales. Lyons reports as of March 2014, when their plan was released, 170 businesses were still in survival mode with some planning to close their doors permanently due to the flood.

The Boulder Small Business Development Center (SBDC) reports that it has been contacted by about 60 businesses regarding flood damage, including a wide range of business types and sizes, from home-based businesses to larger companies. An estimated 100 employees lost jobs temporarily or permanently.

To gauge both the direct and indirect impact that the flood had on Longmont businesses, a survey was sent to businesses through various sources including the Boulder County SBDC and the Longmont Chamber of Commerce. The survey focused on capturing trends of indirect impact in the City.

The responses received to date offer solid insight into the indirect impact which disrupted business operations. Impacts and damages include:

- » Internet service down for multiple weeks

- » Loss of customer base
- » Clients suffered losses and no longer can afford services
- » Loss of production time due to power loss
- » Sole proprietor's home was flooded and needed to close business to address home repairs
- » Area cordoned off and had no access

Among businesses, the source of cost impact is primarily identified as working capital. There is a range of flood-related reasons behind the drain on working capital businesses faced, including:

- » Unexpectedly replacing of product
- » Repairing building damage
- » Covering losses from lack of customers
- » Repairing damaged equipment and machines
- » Covering payroll, utilities, etc. with no income

United States Small Business Administration

The SBA provides disaster loans to businesses that were impacted by the September 2013 flood. According to SBA loan information provided by the State of Colorado in October, 2014, loans were provided in three categories: Business EIDL and Small Agriculture EIDLs and loans to Non-Profits. EIDLs are treated as working capital for use to replace inventories, supplies, machinery and equipment. Businesses need to meet small business definitions under the NAICS code size standards (either employees or sales) to be eligible for this kind of loan. Private, non-profit organizations such as charities and private non-profit universities are also eligible.

According to the data provided by the State, 349 businesses throughout Boulder County applied for loans. Of the 349 applicants, only 162 applications were approved for a total of \$9,146,500. Based on these numbers the average loan was approximately \$56,460. The remaining businesses did not receive a loan. The unmet need can be calculated by multiplying the average loan amount of \$56,460 times the remaining 185 businesses that did not receive a loan for a total of \$10,445,100 in unmet need.

Table 49: SBA Business Economic Injury Disaster Loans (EIDL)

City/Town	Zip Code	Total SBA Apps	Total # Approved	Total Amount Approved	SBA Declined	Withdrawn	In Progress
Eldorado Springs	80025	1	1	4,100	0	0	0

City/Town	Zip Code	Total SBA Apps	Total # Approved	Total Amount Approved	SBA Declined	Withdrawn	In Progress
Lafayette	80026	11	3	90,000	1	7	0
Louisville	80027	5	4	304,100	1	0	0
Jamestown	80455	3	0	0	1	2	
Longmont	80501	74	32	2,649,800	26	12	2
	80502						
	80503						
	80504						
Allenspark	80510	9	8	358,100	1	0	0
Erie	80516	4	3	82,600	1	0	0
Niwot	80544	1	1	14,000	0	0	0
Lyons	80540	49	23	1,592,500	14	10	2
Boulder	80301	192	87	4,051,300	31	74	0
	80302						
	80303						
	80305						
	80306						
	80307						
	80308						
	80309						
	80310						
	80314						
		349	162	9,146,500	76	107	4

There were 83 Small Agriculture loan applications to SBA. Of those, only 16 were approved for a total of \$310,400. This is an average of approximately \$16,337 per loan. The 64 remaining applications were not approved. The unmet need can be calculated by multiplying the average loan amount of \$16,337 times the remaining 64 applicants for an estimated unmet need of \$1,045,568.

Table 50: SBA Small Agriculture Economic Injury Disaster Loans (EIDL)

City/Town	Zip Code	Total SBA Apps	Total # Approved	Total Amount Approved	SBA Declined	Withdrawn	In Progress
Eldorado Springs	80025	1	1	5,000	0	0	0
Jamestown	80455	2	0	0	0	2	0
Nederland	80466	1	0	0	1	0	0
Longmont	80501	11	4	40,600	5	2	0
	80502						
	80503						
	80504						
Allenspark	80510	3	1	20,000	2	0	0
Lyons	80540	42	8	173,300	15	19	0

City/Town	Zip Code	Total SBA Apps	Total # Approved	Total Amount Approved	SBA Declined	Withdrawn	In Progress
Boulder	80301	23	5	71,500	9	9	0
	80302						
	80303						
	80305						
	80306						
	80307						
	80308						
	80309						
	80310						
	80314						
		83	19	310,400	32	32	0

The last category of SBA loans was to non-profits. There were 51 applications for loans and 31 of those loans were approved for a total of \$2,851,300. This is an average of approximately \$81,466 per approved loan. Based on this average, the remaining 16 non-profits have an unmet need of approximately \$1,303,456.

Table 51: SBA Non Profit Loans

City/Town	Zip Code	Total SBA Apps	Total # Approved	Total Amount Approved	SBA Declined	Withdrawn	In Progress
Eldorado Springs	80025	8	7	287,000	0	1	0
Longmont	80501	5	1	75,000	1	3	0
	80502						
	80503						
	80504						
Boulder	80301	38	27	2,489,300	2	9	0
	80302						
	80303						
	80305						
	80306						
	80307						
	80308						
	80309						
	80310						
	80314						
		51	35	2,851,300	3	13	

Table 52: Total Unmet Need for Business, Small Agriculture, and Non Profits Based on SBA Data

Type of SBA Loan	Total SBA Apps	Total # Approved	Total Amount Approved	Total No Loans	Unmet Need
Business EIDL	349	162	9,146,500	185	10,445,100
Sm. Ag. EIDL	83	19	310,400	64	1,045,568
Non-Profits	51	35	2,851,300	16	1,303,456
					\$12,794,124

Based on the total loans that were not funded, the unmet need can be determined to be approximately \$12,794,124.

State of Colorado CDBG-DR Economic and Agriculture Programs

The State of Colorado allocated \$38,654,000 for Economic Recovery for businesses and agriculture. The State established several types of assistance including business grants and loans, tourism marketing grants, small business technical assistance, small business and workforce development, agricultural business grants, and ditch company grants. Of the \$38,654,000 allocated, at least 80% or \$30,923,200 must go to the three most impacted counties of Boulder, Weld, and Larimer. According to the State's Substantial Action Plan Amendment, as of March 19, 2014, the three most impacted counties of Boulder, Weld, and Larimer had received 292 SBA loans for impacted businesses. Boulder County had 177 (60.6%) of the damaged businesses. Based on this percentage, approximately \$18,739,459 of \$30,923,200 should go to Boulder County.

Table 53: State of Colorado Funding for Economic Revitalization Round 1 and 2

Activity	Round 1 Funds	80% Funds	Round 2 Funds	80% Funds	Total	Total 80%
Recover Colo. Business Grant/Loan	\$9,000,000	\$7,200,000	8,438,500	3,870,800	\$17,438,500	\$13,950,800
Tourism/Marketing	\$500,000	\$400,000	\$728,300	\$582,640	\$1,228,300	\$982,640
TA Sm. Business	-0-	-0-	\$242,800	\$194,240	\$242,800	\$194,240
Sm. Bus. and Workforce Devel.	-0-	-0-	\$6,667,400	\$5,333,920	\$6,667,400	\$5,333,920
Ag. Bus. Grants	\$4,500,000	\$3,600,000	\$4,500,000	\$3,600,000	\$9,000,000	\$7,200,000
Ditch Co. Grants	-0-	-0-	\$4,077,000	\$3,261,600	\$4,077,000	\$3,261,600
				TOTAL	\$38,654,000	\$30,923,200

Table 54: Local Community Assistance to Businesses

Town	Assistance Program	Amount of Funding
Lyons	Business Recovery Fund	\$250,000

Summary

The current unmet need based on the Boulder County SBA loan data totals approximately \$12,794,124. The State can be estimated to provide approximately \$18,739,459 for Boulder County. Based on this information, there might be sufficient resources to address the unmet business and agriculture needs.

Section 5 Planning & Community Needs

Boulder County Unmet Planning Needs

Due to the extensive damages to the county's housing, infrastructure, and businesses, comprehensive needs assessments and planning studies are needed to ensure that the CDBG-DR funds are distributed in accordance with need and that best designs are implemented to provide for long-term recovery and increased resiliency to future disasters. The county has identified approximately **\$8,501,689** in unmet need for the following planning efforts.

Table 55: Planning and Staffing Needs for Resiliency

Community	Activity	Total Cost	Funding Resources	Unmet Need
Boulder County	Floodplain staffing: 2 FTE planners	\$299,606	\$0.00	\$299,606
Boulder County	Floodplain staffing: Mapping Specialist/Engineer	\$162,102	\$0.00	\$162,102
Boulder County	Floodplain staffing: permitting	\$149,802	\$0.00	\$149,802
Boulder County	Floodplain mapping project: St. Vrain-Main Stem	\$167,000	\$0.00	\$167,000
Boulder County	Floodplain mapping project: St. Vrain-North St. Vrain	\$109,000	\$0.00	\$109,000
Boulder County	Floodplain mapping project: St. Vrain-South St. Vrain	\$196,000	\$0.00	\$196,000
Boulder County	Floodplain mapping project: St. Vrain-Middle St. Vrain	\$157,000	\$0.00	\$157,000
Boulder County	Floodplain mapping project: Left Hand Creek-Lower Left Hand Creek	\$243,000	\$0.00	\$243,000
Boulder County	Floodplain mapping project: Left Hand Creek-Upper Left Hand, James Creek, Little James Creek-Four Mile Creek	\$106,000	\$0.00	\$106,000
Boulder County	Floodplain mapping project: Boulder Creek-Four Mile Creek, Gold Run, Four Mile Canyon Creek	\$225,000	\$0.00	\$225,000
Boulder County	Floodplain mapping project: Boulder Creek-East of on-going FEMA Study	\$196,000	\$0.00	\$196,000
Boulder County	BoCo Strong: Community Resiliency Building	\$300,000	\$0.00	\$300,000
Boulder County	Staffing for Recovery Planning and Resiliency	\$238,856	\$0.00	\$238,856
Boulder County	Strategic Continuity, Response, and	\$175,000	\$0.00	\$175,000

	Recovery Plan			
Boulder County	Staff Geologist	\$128,000	\$0.00	\$128,000
Boulder County	Creek Recovery Project: Left Hand Creek Restoration/Permanent Road Design Integration	\$300,000	\$0.00	\$300,000
Boulder County	Creek Recovery Project: Four Mile Creek Restoration/Permanent Road Design Integration	\$300,000	\$0.00	\$300,000
Boulder County	Creek Recovery Project: POS-St. Vrain Creek Restoration Breaches 1 & 2	\$255,570	\$0.00	\$255,570
Boulder County	Creek Recovery Project: POS-St. Vrain Creek Restoration Breaches 5-9	\$216,500	\$0.00	\$216,500
Boulder County	Creek Recovery Project: POS-St. Vrain Creek Restoration at Hall Ranch	\$300,000	\$0.00	\$300,000
Boulder County	Creek Recovery Project staffing: Program Coordinator	\$150,795	\$0.00	\$150,795
Boulder County	Creek Recovery Project staffing: Project Manager	\$158,603	\$0.00	\$158,603
Boulder County	Creek Recovery Project staffing: Planner/Engineer	\$216,000	\$0.00	\$216,000
	Boulder County Subtotal	\$4,749,834	\$0.00	\$4,749,834
City Boulder	Open Space Wildlife Technician (applied Round 1)	\$14,000	\$0.00	\$14,000
City Boulder	Skunk Creek Mitigation Plan (will apply in Round 2)	\$100,000	\$0.00	\$100,000
City Boulder	Upper Goose Creek Mitigation Plan (will apply in Round 2)	\$100,000	\$0.00	\$100,000
	City of Boulder Subtotal	\$214,000	\$0.00	\$214,000
Lyons	Needs Assessment	\$25,000	\$0.00	\$25,000.
Lyons	Apple Valley Feasibility Analysis	\$70,000	\$0.00	\$70,000.
Lyons	Emergency Preparedness	\$200,000	\$0.00	\$200,000
Lyons	Ecological Biosolids Management Study	\$50,000	\$0.00	\$50,000
Lyons	Urban Renewal Formation and Assoc.	\$80,000	\$0.00	\$80,000
Lyons	Updates to Codes, Comprehensive Plan, Design and Construction Standards	\$150,000	\$0.00	\$150,000
Lyons	Storm Water Master Plan	\$120,000	\$0.00	\$120,000
Lyons	NFIP/CRS Community Rating System	\$40,000	\$0.00	\$40,000
Lyons	Flood Plain Mapping	\$200,000	\$0.00	\$200,000
Lyons	CIP/Rate study for electrical service	\$70,000	\$0.00	\$70,000

Lyons	Land Use Plan for Acquired Properties	\$250,000	\$0.00	\$250,000
Lyons	Flood Recovery Planner	\$136,080	\$0.00	\$136,080
Lyons	CEC Land Use Plan	\$125,000	\$0.00	\$125,000
Lyons	Communications Upgrade-Town Hall	\$50,000	\$0.00	\$50,000
Lyons	Water Rights and Use Analysis	\$50,000	\$0.00	\$50,000
Lyons	Comprehensive Signage Plan	\$50,000	\$0.00	\$50,000
Lyons	Water Storage Redundancy Feasibility Study	\$50,000	\$0.00	\$50,000
Lyons	Downtown to River Feasibility Analysis	\$125,000	\$0.00	\$125,000
Lyons	Digital Record Conversion	\$300,000	\$0.00	\$300,000
Lyons	Acquisition Land Use Plan for Apple Valley	\$300,000	\$0.00	\$300,000
Lyons	BID/DDA Feasibility Analysis and Formation	\$90,000	\$0.00	\$90,000
Lyons	Decommission Apple Valley Water Treatment Plat	\$50,000	\$0.00	\$50,000
Lyons	GIS Staff	\$200,000	\$0.00	\$200,000
	Lyons Subtotal	\$2,781,080	\$0.00	\$2,781,080
Longmont	City of Longmont Unmet Needs Assessment	\$156,000	\$0.00	\$156,000
Longmont	Resiliency Performance Standards	\$188,000	\$0.00	\$188,000
Longmont	St. Vrain Blueprint	\$122,695	\$0.00	\$122,695
Longmont	Watershed Ranger	\$114,925	\$0.00	\$114,925
Longmont	Flood Recovery Specialist	\$144,311	\$0.00	\$144,311
Longmont	Resiliency Environmental Planner	\$144,844	\$0.00	\$144,844
Boulder County/ Longmont	Boulder County Collaborative Unmet Needs Assessment	\$86,000	\$0.00	\$86,000
	Longmont Subtotal	\$956,755	\$0.00	\$956,755
Nederland	Post Flood Housing Study	\$14,000	\$0.00	\$14,000.
	Grand Totals:	\$8,501,689	\$0.00	\$8,501,689

Loss of Revenue

Due to the September 2013 flood, units of local government lost revenue they otherwise anticipated receiving. Waived fees, lost rent, and relocation costs are some of the contributors that negatively impacted general fund revenue and tax collections. Table 59 below shows lost revenue due to tax

collections, and Table 60 presents unmet needs based on lost taxes and revenue, along with waived fees, lost rents and other costs, which together total \$4,064,718.

Table 56: Loss Taxes/Revenue Due to Flood

Boulder County	\$495,723.73
St Vrain RE1J Schools	\$253,410.90
Boulder Valley RE2 Schools	\$209,646.54
Thompson LR2J Schools	\$11,705.45
Park LRP3J Schools	\$716.29
City of Boulder	\$9,727.89
Town of Jamestown	\$11,305.58
City of Longmont	\$6,167.08
Town of Lyons	\$7,580.20
Town of Superior	\$3.84
Northern Colorado Water Conservancy District	\$908.44
Pine Brook Water District	\$1,039.11
St Vrain Lefthand Water District	\$359.67
Urban Drainage and Flood Control District	\$229.01
Boulder Mountain Fire Water Subdistrict	\$57.42
Allenspark Fire District	\$697.09
Berthoud Fire District	\$2,527.84
Fire Mile Canyon Fire District	\$2,192.36
Hygiene Fire District	\$146.57
Mountain View Fire District	\$917.68
Lyons Fire District	\$21,764.80
Gold Hill Fire District	\$114.75
Left Hand Fire District	\$4,842.19

Boulder Rural Fire District	\$120.84
Boulder Mountain Fire District	\$675.06
Rocky Mountain Fire District	\$839.56
Longmont Downtown Development Authority	\$20.09
	\$39.13
Total	\$1,043,479

Cumulative estimate of property taxes/revenue lost due to 2013 flood only reflects those properties with destroyed buildings due to flood, where building value was removed from 9/12/2013 to 12/31/2013. The table below includes lost revenue related to revenue and taxes, as well as waived fees, relocation costs, lost rent and the remaining factors.

Table 57: Summary of Loss of General Fund Revenue Due to Flood Impacts

City/Town	Project	Total Cost	Funding Resources	County Unmet Need
All Communities	Lost taxes/revenue due to destroyed buildings from the flood	\$1,043,479	\$0.00	\$1,043,479
Boulder County	Housing Stabilization Flood Related Costs	\$169,528	\$0.00	\$169,528
City of Boulder	Flood Recovery Permit Fee Waivers	\$251,046	\$0.00	\$251,046
City of Boulder	Annexation Application Waivers	\$159,180	\$0.00	\$159,180
Boulder County Housing Authority	Aspinwall Relocation Costs	\$14,000	\$0.00	\$14,000
Boulder County Housing Authority	Lost Rent - Lyons Residents	\$12,922	\$0.00	\$12,922
Boulder County Housing Authority	Lost Rent - Lyons Units	\$24,465	\$0.00	\$24,465
Lafayette	Lost Revenue	\$54,457	\$0.00	\$54,457
Lyons	Building Permit Waivers -	\$5,500	\$0.00	\$5,500

Lyons	Loss Property Taxes	\$29,000	\$0.00	\$29,000
Lyons	Unfunded Staff	\$53,255	\$0.00	\$53,255
Lyons	Repurposed Staff	\$1,500,000	\$0.00	\$1,500,000
Lyons	Utility Base Rate for landowner buyout	\$150,000	\$0.00	\$150,000
Lyons	Loss Revenue	\$210,000	\$0.00	\$210,000
Lyons	Electric Rate Subsidy repayment to customers	\$100,000	\$0.00	\$100,000
Longmont	Lost building inspection fee revenue from flood waiver (Longmont) ²⁵	\$287,886	\$0.00	\$287,886
	Total	\$4,064,718	\$0.00	\$4,064,718

OTHER COMMUNITY NEEDS

The final category of unmet needs relates to the projects that several Boulder County communities need to recover beyond just damage repairs and resiliency but also be made strong community once again. These additional needs are listed in the tables below.

Table 58: Boulder County

Community	Project	Total Cost	Resources	Remaining Need
Boulder County	Delivery of sandbags	\$34,100	\$0.00	\$34,100
	Total	\$34,100	\$0.00	\$34,100

Table 59: Louisville

Community	Project	Total Cost	Resources	Remaining Need
Louisville	Lost Golf Course Contractor Payment	\$270,000	\$0.00	\$270,000
Louisville	Golf Course Lost Revenue covered by City	\$308,905	\$0.00	\$308,905
	Total	\$578,905	\$0.00	\$578,905

²⁵ City of Longmont Unmet Needs Assessment, July 31, 2013

Table 60: Longmont

Community	Project	Total Cost	Resources	Remaining Need
Longmont	Unreimbursed public safety costs from flood response	\$30,000	\$0.00	\$30,000
Longmont	Municipal Buildings UPS Repair and Replacement	\$12,250	\$0.00	\$12,250
Longmont	3 year etherswitch Power over Ethernet (PoE) replacement program	\$40,000	\$0.00	\$40,000
Total		\$82,000	\$0.00	\$82,000

Table 61: Lyons

Community	Project	Total Cost	Resources	Remaining Need
Lyons	Street Sweeper	\$120,000	\$0	\$120,000
Lyons	Installation of Scada systems for early warning detection for sewer lift stations	\$150,000.00	\$0.00	\$150,000.00
Lyons	Regional Trail Extensions to Longmont and Boulder regional planning	\$465,000	\$0	\$465,000
Lyons	Relocate and Rebuild Skate Park because moving municipal building out of floodplain to that location	\$485,000.00	\$0.00	\$485,000
Lyons	Installation of handicap restroom, irrigation, and lighting Black Bear Hole Park to enhance public health and safety	\$265,000.00	\$60,000.00	\$205,000

Lyons	Bohn Park Irrigation pump house and filtration system	\$195,000	\$0.00	\$195,000
Lyons	Meadow Park Irrigation pump house and filtration system	\$195,000.00	\$0.00	\$195,000.00
Lyons	Part of regional plan to provide bike lanes under 2 bridges (Hwy 36N)	\$4,000,000.00	\$0.00	\$4,000,000
Lyons	Part of regional plan to provide bike lanes under Hwy 36/Hwy 66 intersection	\$2,500,000	\$0	\$2,500,000
	Total	\$8,375,000	\$60,000	\$8,315,000

Table 62: Nederland

Community	Project	Total Cost	Resources	Remaining Need
Nederland	Street Sweeper	\$160,000	\$0.00	\$160,000
Nederland	Portable Computers for Emergency vehicles	\$20,000	\$0.00	\$20,000
	Total	\$180,000	\$0.00	\$180,000

Table 63: Total of Other Community Needs for Local Governments

Community	Total Cost	Resources	Remaining Need
Boulder County	\$34,100	\$0.00	\$34,100
Longmont	\$82,000	\$0.00	\$82,000
Louisville	\$578,905	\$0.00	\$578,905
Lyons	\$8,375,000	\$60,000	\$8,315,000
Nederland	\$180,000	\$0.00	\$180,000
Total	\$9,250,005	\$60,000.00	\$9,190,005

Summary

Boulder County and its local governments were the first responders to the 2013 flood in their communities. Emergency response and the effort each community undertook to address both immediate and long-term recovery depleted precious community resources and left needs that still need to be addressed to comprehensively recover from the disaster. The local governments need planning and capacity assistance totaling \$8,501,689. They need to replenish local lost revenue totaling

\$4,064,718. And, additional community needs that total \$9,190,005. Combined, this represents approximately \$21,756,412 in additional unmet need.

Section 6 Climate Change Impacts and Resiliency

Comprehensive Risk Analysis

“The scientific evidence is clear – the Earth’s climate is warming,” reports the State of Colorado’s recent publication on Climate Change²⁶ prepared by the Cooperative Institute of Research in Environmental Sciences (CIRES), University of Colorado Boulder. According to the report, many independent measurements have confirmed widespread warming in the west. The State’s water resources are being affected by rising temperatures. Colorado has seen temperatures increase by approximately 2 degrees between 1977 and 2006.

Congress and HUD are making the linkage between climate change and major disasters. Starting with the allocation of \$16 billion by Congress to address the disaster caused by Hurricane Sandy, and carried through in the appropriation language by HUD provided in the Federal Register Notices, additional measures should be followed to ensure that communities are not only building back to pre-disaster conditions, but taking the time to assess new risks and build in additional resiliency to climate impacts.

In the June 3, 2014, Federal Register Notice, HUD inserted the following requirement for Comprehensive Risk Analysis for all planned infrastructure projects:

Comprehensive Risk Analysis. Each grantee must describe the science-based risk analysis it has or will employ to select, prioritize, implement, and maintain infrastructure projects or activities. At a minimum, the grantee’s analysis must consider a broad range of information and best available data, including forward-looking analyses of risks to infrastructure sectors from climate change and other hazards, such as the Midwest, Great Plains and Southwest United States Regional Climate Trends and Scenarios from the U.S. National Climate Assessment or comparable peer-reviewed information. The grantee should also consider costs and benefits of alternative investment strategies, including green infrastructure options. In addition, the grantee should include, to the extent feasible and appropriate, public health and safety impacts; direct and indirect economic impacts; social impacts; environmental impacts; cascading impacts and interdependencies within and across communities and infrastructure sectors; changes to climate and development patterns that could affect the project or surrounding communities; and impacts on and from other infrastructure systems. The analyses should, wherever possible, include both quantitative and qualitative measures and recognize the inherent uncertainty in predictive analysis. Grantees should work with other states and units of general local

²⁶ *Climate Change In Colorado: A Synthesis to Support Water Resources Management and Adaption*, Second Edition-August 2014. A report for the Colorado Water Conservation Board. The report can be found at www.cwcb.state.co.us/environment/climate-change .

government to undertake regional risk baseline analyses, to improve consistency and cost-effectiveness. [79 FR 31967]

The State of Colorado has been very proactive in undertaking comprehensive risk analysis with an emphasis on regional and statewide approaches. The recent report, *Climate Change In Colorado*, is a synthesis of climate science relevant for management and planning for Colorado's water resources. The data was gathered through focuses on observed climate trends, climate modeling, and projections of temperature, precipitation, snowpack, and streamflow. The report summarizes Colorado-specific findings from peer-reviewed regional studies. The state is home to many experts in climate and hydrology, and the report draws from ongoing work by these scientists. The report concludes that "changes in the water cycle will be the delivery mechanism for many impacts of climate change." The report summarizes the following implications:

- Water demands for agriculture and outdoor watering: Increasing temperatures raise evapotranspiration by plants, lower soil moisture, alter growing seasons, and thus increase water demand.
- Water supply infrastructure: Changes in snowpack, streamflow timing, and hydrograph evolution may affect reservoir operations including flood control and storage. Changes in the timing and magnitude of runoff may affect functioning of diversion, storage, and conveyance structures.
- Legal water systems: Earlier runoff may complicate prior appropriations systems and interstate water compacts, affecting with rights holders receive water and operations plans for reservoirs.
- Water Quality: Although other factors have a large impact, "water quality is sensitive both to increased water temperatures and changes in patterns of precipitation". For example, changes in the timing and hydrograph may affect sediment load and pollution, impacting human health.
- Energy demand and operating costs: Warmer air temperatures may place higher demands on hydropower reservoirs for peaking power. Warmer lake and stream temperatures may affect water use by cooling power plants and in other industries.
- Mountain habitats: Increasing temperature and soil moisture changes may shift mountain habitats toward higher elevation.
- Interplay among forests, hydrology, wildfires, and pests: Changes in air, water, and soil temperatures may affect the relationships between forests, surface and ground water, wildlife, and insect pest. Water-stressed trees, for example, may be more vulnerable to pests.
- Riparian habitats and fisheries: Stream temperatures are expected to increase as the climate warms, which could have direct and indirect effects on aquatic ecosystems, including the spread of in-stream non-native species and diseases to higher elevations, and the potential for non-native plant species to invade riparian areas. Changes in streamflow intensity and timing may also affect riparian ecosystems.
- Water- and snow-based recreation: Changes in reservoir storage affect lake and river recreation activities; changes in streamflow intensity and timing will continue to affect rafting directly and trout fishing indirectly. Changes in the character and timing of snowpack and the ratio of snowfall to rainfall will continue to influence winter recreational activities and tourism.

- Groundwater resources: Changes in long-term precipitation and soil moisture can affect groundwater recharge rates; coupled with demand issues, this may mean greater pressures on groundwater resources.

The Colorado Water Commission Board (CWCB) has developed methods to manage water resources in the past, but these future climate changes may pose new challenges for water managers. The CWCB efforts include the Colorado Climate Preparedness Project with an on-line data base²⁷ which is an important component of the project. The data base is a searchable collection of information about groups and individuals actively engaged in climate adaptation work in Colorado. Products go beyond reports and studies to include natural hazard mitigation plans which can serve as a resource for climate preparedness planning by illustrating measures already in place to adapt to climate variability.

In addition to the above, completed analysis, the State of Colorado has undertaken a statewide resiliency framework, beginning at the time of writing with a broad stakeholder process and leading to analysis, recommendations and a final framework product. The information gained through the resiliency framework process will support the state's participation in HUD's National Disaster Recovery Competition grant opportunity.

Resiliency Performance Standards

The definition of resilience is "an occurrence of rebounding or springing back"²⁸. The Disaster Relief Appropriations Act, 2013,(Pub. L. 113-2), provided additional funds to areas impacted by disasters in 2013 for recovery, including mitigation and resilience as part of the recovery effort. Per the June 3, 2014 Federal Register, grantees are required to identify and implement resilience performance standards, specifically:

Resilience Performance Standards. Grantees are required to identify and implement resilience performance standards that can be applied to each infrastructure project. The grantee must describe its plans for the development and application resilience performance standards in any Action Plan Amendment submitted pursuant to this Notice. [79 FR 31968]

The recent focus on resilience marks a shift from *resistance* strategies focused solely on the anticipation of risk and the mitigation of vulnerability to more inclusive strategies that integrate both *resistance* (prevent, protect) and *resilience* (respond, recover) in the face of disasters. The critical elements of a local resilience assessment include a look at the five subsystems as they really are and a willingness to see possibilities for putting resources together in new ways in the event of a disruption. The following list of questions represents the most basic level of examination to assess the resilience of a community subsystem.

Basic Questions for Resilient Assessment

- Which functions are vital to our community within the subsystem:
- What resources are available to perform this function?

²⁷ www.coloadaptationprofile.org

²⁸ www.thefreedictionary.com

- How well does this resource perform a particular function? How well would it perform in a disruption? (**Performance**)
- How much of this resource do we have (**Redundancy**)
- Are there other resources available that could perform this function? (**Diversity**)
- To what extent do organizations and informal social groups within this subsystem instill and maintain a common memory (**Institutional Memory**)
- To what extent do organizations and informal social groups within this subsystem foster a culture of continuous learning and innovation? (**Innovative Learning**)
- To what extent do organizations and informal social groups within this subsystem internally and externally connected? Are they loosely connected or tightly connected? How will a disturbance that affects one organization or social group impact others? (**Connectedness**)

Performance goals for buildings and infrastructure should consider a system's role in the community (e.g., essential facilities, facilities of a major employer, etc.), the performance that is required (alternatively, the level of damage that is acceptable) during and after a hazard event, as well as system recovery. Performance issues may include identifying hazards and risk-based performance criteria for essential systems to continuously operate during hazard events, systems that need to meet other levels of performance based on their role in the community or on owner needs, and specified recovery times.

*Develop guidelines and standards for achieving resilient communities with adoption of codes and standards*²⁹

- Develop guidance for communities on adopting model codes and standards to achieve life safety and on identifying situations when the minimum codes and standards requirements should be exceed to promote resilience.
- Develop or modify standards on design loads that address risk-based hazards for multiple resilience levels.
- Develop or modify standards to address risk-based building and infrastructure system performance.
- Develop or modify standards for risk-based total building performance that address structural and non-structural building systems.
- Develop or modify standards for risk-based infrastructure system performance, including multi-point failures, interdependencies of infrastructure systems, and consistent performance goals for segmented systems (e.g., power generation, distribution, and transmission).

The resilience of the built environment strongly depends on the building standards, codes, and practices used when they were built. A resilient built environment considers the role of buildings and infrastructure systems on the community, desired levels of functionality before, during, and after disruptive hazard events, and prioritization of steps needed to achieve such performance.

²⁹ *Developing Guidelines and Standards for Disaster Resilience of the Built Environment: A Research Needs Assessment*, NIST Technical Note 1795, March 2013.

RESILIENCY CALCULATION METHODOLOGY

HUD calculates the cost to rebuild the most impacted and distressed homes, businesses, and infrastructure back to pre-disaster conditions to arrive at a base calculation. The Federal Register states, “[F]rom this base calculation, HUD calculates both the amount not covered by insurance and other federal sources to rebuild back to pre-disaster conditions as well as a “resiliency” amount which is calculated at 30 percent of the total basis cost to rebuild back the most distressed homes, businesses, and infrastructure to pre-disaster conditions.” [79 FR 31972]

Summary

Boulder County and its communities will be able to use the state resources to complete the required comprehensive risk assessment for its infrastructure projects; however, it should be noted that currently identified infrastructure projects from the previous sections may substantially increase in costs as resiliency and climate change risks are factored into the overall project’s planning and implementation strategies.

Conclusion

[To be completed with final draft]

References

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-Initial Federal Register Notice for the allocation of the \$16 billion of CDBG disaster recovery funds appropriated by Congress for disasters occurring in 2011, 2012, and 2013
- *Allocation of 2013 CDBG Disaster Recovery Funds, U.S. Department of Housing and Urban Development*, December 16, 2013 [78 FR 76154]
-Round 1 allocation of \$62,800,000 of CDBG disaster recovery funds for the State of Colorado
- *Allocation of 2013 CDBG Disaster Recovery Funds, U.S. Department of Housing and Urban Development*, June 3, 2014 [79 FR 31964]
-Round 2 allocation of \$199,300 of CDBG disaster recovery funds for the State of Colorado
- *FEMA IA Data, State of Colorado*, October, 2014 – data on the amount of Individual Assistance received by residents of each community in Boulder County.
- *FEMA PA Data*, provided by the communities of Longmont, Lyons, Nederland, Lafayette, Louisville, Jamestown, City of Boulder, and Boulder County, September –October, 2014
– Data on the amount of FEMA Public Assistance obligated and under review in each community
- *SBA Loans, State of Colorado*, October, 2014
– Data by zip code loan assistance awarded to individuals, businesses, small agriculture, and non-profits
- *Boulder County Point in Time Homeless Data, Metro Denver Homeless Initiative, 2012, 2013, 2014*
- *United States Census Bureau, 2010, State and County Quickfacts, Boulder County, November 2014.* www.quickfacts.census.gov
- *Special Districts Survey, Boulder County, September 2014.*
- *State of Colorado Action Plan for Disaster Recovery, Version 1.3, July 21, 2014.*
- *State of Colorado Action Plan #1, Substantial Amendment for Second Allocation of CDBG – Disaster Recovery, November 3, 2014.*
- *Boulder County Flood Recovery Resource Guide, Spring 2014.*
- *Colorado United: Local Impact and Priority Survey, December 2013.*
- *City of Longmont Unmet Needs Assessment, July 31, 2014.*
- *St. Vrain Watershed Master Plan, Draft June 11, 2014*
<https://projects.mbakercorp.com/stvraincreekmp/Pages/default.aspx>
- *Left Hand Creek Watershed Master Plan, October, 2014*
- *Little Thompson Watershed Master Plan, <http://ltwrc.org>, October, 2014*
- *Boulder County Comprehensive Creek Plan, November, 2014.*
- *Boulder County Creek Planning Initiative, Policy Team Update, October 21, 2014.*

- *Town of Lyons, Housing Needs Assessment, Pre and Post Flood Analysis*, February 2014.
- *Town of Lyons Recovery Action Plan*, March 2014
- *Town of Nederland, Infrastructure Master Plan*, July 25, 2014.
- *Climate Change In Colorado: A Synthesis to Support Water Resources Management and Adaption*, Second Edition-August 2014.
- *Boulder County Government Department reports*, October, 2014

- Administration & Budget
- Transportation
- Housing & Human Services
- Community Services
- Parks & Open Space
- Land Use
- Flood Recovery
- Boulder County Tax Assessors Office

Note: Data gathered and provided by each of the individual sources reflects the best available data at the time of writing. Figures may vary due to differing definitions of storm impacts and their degrees (i.e., major, severe, etc.), gathering data at different times subsequent to the disaster event, and the objectives of each distinct data gathering activities. However, taken together, a clear range of the impacts can be determined and unmet needs have been identified.

Acronyms

Acronym	Term
AMI	Area Median Income
BCA	Benefit-Cost Analysis
BCHHS	Boulder County Department of Housing and Human Services
CDBG-DR	Community Development Block Grant-Disaster Disaster Recovery
CDOT	Colorado Department of Transportation
CFS	Cubic Feet Per Second
CHIF	Colorado Housing Investment Fund
CSI	Community Strategies Institute
CWCB	Colorado Water Conservation Board
DAC	Disaster Assistance Center
DEA	Drug Enforcement Agency
DHSEM	Division of Homeland Security and Emergency Management
DOD	Department of Defense
DOLA	Department of Labor Affairs
DPA	Down Payment Assistance
EDA	Economic Development Agency
EIDL	Economic Injury Disaster Loans
EPA	Environmental Protection Agency
EPM	Emergency Protective Measures
FEMA	Federal Emergency Management Agency
FVL	FEMA Verified Loss
GIS	Geographic Information Systems
GOCO	Greater Outdoors Colorado
HFHSV	Habitat for Humanity of the St. Vrain Valley

HMGP	Hazard Mitigation Grant Program
HUD	United States Department of Housing and Urban Development
IA	Individual Assistance
LHA	Longmont Housing Authority
LHDC	Longmont Housing Development Corporation
LIHTC	Low Income Housing Tax Credit
LMI	Low-Moderate Income
LPC	Longmont Power and Communication
LTFRG	Long Term Flood Recovery Group
NOI	Notice of Intent
OUR Center	Outreach United Resource Center
PA	Public Assistance
PIT	Point-In-Time
PoE	Power over Ethernet
PP	Personal Property
PW	Project Worksheet
PWNR	Department of Public Works and Natural Resources
RP	Real Property
SBA	Small Business Administration
SBDC	Small Business Development Center
UPS	Uninterrupted Power Supply
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
WWTP	Wastewater Treatment Plant

Appendix C

Graphics of Flood Impacts
